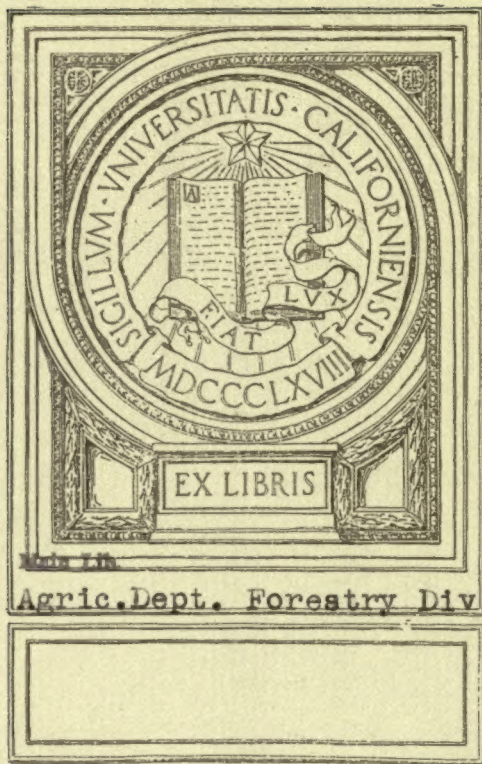




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FORESTRY PAMPHLETS
CANADA VOL. XVIII

AGRICULTURAL AND INDUSTRIAL PROGRESS

IN
MONTREAL

VOLUMES III and IV

1921 - 1922.

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Agricultural and Industrial Progress in Canada

A monthly review of Agricultural and Industrial progress in Canada, published by the Department of Colonization and Development of the Canadian Pacific Railway at Montreal, Canada.

VOL. 3—No. 1

MONTREAL

January, 1921

Live and Let Live

THE Northeastern Michigan Development Bureau has issued a neat little pamphlet in which is graphically set forth the attractions of Northeastern Michigan as a prosperous farming country and one offering excellent opportunities to the settler.

Canada has no quarrel with the Michigan Development Bureau, whose booklet is well printed, well illustrated, informative and attractive; nor any criticism of the opportunities and advantages of settlement in Northern Michigan, but when we read the statement that

"Since the West is gone, so far as cheap land is concerned, and North-western Canada is not producing the desired results for good, practical farmers not bent on the gambling chances for overnight riches, attention is directed to Michigan,"

we cease commendation and take up the issue.

The days when statements of this kind used to appear in our neighbor's literature and press have pretty well gone by, and, to be frank, we must express appreciation of many good things said of us from time to time by the United States press. They have been generous; they have realized that Senator Smoot's remark that "Neither patriotism nor sentiment will prevent a man from going where he can better his condition," is incontrovertible, and it applies equally to emigration from this country.

A farmer who stakes his all on one crop, or who fails to conserve the fertility of the soil through lack of rotation, may well be called a gambler, and undoubtedly there have been and are such farmers in Canada as elsewhere, but that Western Canadian soil does not produce desirable results for practical farmers is a foolish and untruthful statement. Faint praise has damned many a good thing, and that there may

be no doubt whatsoever in the minds of those who are not well informed as to what Western Canadian soil can produce and what Canadian farmers have done during the past year, here are a few records of accomplishment, picked at random from many published statements by the press of Alberta, Saskatchewan and Manitoba.

Hassar, Alberta, June, 1920. Convinced of the high value of the land in his sector, E. J. Harper, an American farmer here, has purchased two sections of land in addition to his holdings of 1,210 acres. In spite of last year's dry season, Mr. Harper raised 24,000 bushels of wheat and 10,000 bushels of oats. So satisfied was he of the possibilities of the land that he put back his profits into the soil, and the whole of the two sections are being put under cultivation this year.

THE outlook for 1921 is what we make it. If we believe in the intrinsic stability of Canada; if we meet our problems with confidence; if we think success instead of failure; if we talk progress instead of stagnation; if we prove our faith in ourselves and our country by earnest, honest work; then no one can doubt the outcome. ∴ ∴ ∴ ∴

Regina, Saskatchewan, September, 1920. 100,000 Americans will settle in Western Canada during the next year according to opinions expressed by bankers, business men and farmers from across the line, who recently made a 3,000-mile excursion through the Prairie Provinces. "The trip has been a revelation to me," said one Michigan busi-

ness man, and "I backed my faith in Canada with my money," stated a Kansan, who had purchased holdings in Alberta and Saskatchewan. Another in the party, an Illinoisian, said, "We are carrying back home the message of the West, a message of welcome to a Land of Opportunity. A great wave of immigration is inevitable."

Winnipeg, Manitoba, May, 1920. Thirty settlers from Northern Minnesota and Wisconsin arrived here one day last week, and 58 carloads of settlers' effects reached the Swan River Valley. One hundred American families are settling in the Swan River District, a number of whom will produce crops this year.

A knock often becomes a boost—like a boomerang, it comes back. No good end is obtained by controversion of facts; no lasting advantage by running down your neighbor. Live and let live. There is room for everybody and to spare. Speak only the truth and shame

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Norman S. Rankin, *Editor.*

the devil. True patriotism consists not in speaking ill of your neighbor's country, but in believing in and working for your own.

The International Livestock Exhibition

Compiled by J. Dougall, Agricultural Agent, C.P.R., Montreal, Que.

The recent Chicago International Livestock Exhibition is always the stock event of the year in North America, and was this year, perhaps, the best show that has been held. Canadian exhibitors at the show were well pleased with the number of prizes carried away, especially when they had to compete with such a large number of entries.

One feature outstanding was the result of the competition in the Grain and Hay Show. Canadian farmers have again demonstrated that they can compete with the world, and showed their ability to furnish the North American continent with seed. The Northern climate produces year after year, banner prize grains that carry away the ribbons.

This year, oats, flint corn, and spring wheat were in the lead, and were surely the salt of the earth. Better samples were never seen. Two sweepstake silver cups went to Canadians; for oats, to I. W. Lucas, Calgary District, Alberta; and for Marquis wheat, to J. C. Mitchell, of Dahinda, Saskatchewan. Fourteen out of fifteen prizes for the district including N. W. States, U.S.A., and the Provinces of Alberta, Manitoba and Saskatchewan in Canada, went to Canadian farmers, the Province of Alberta securing the greatest number.

In the district including Central United States and the Province of Ontario, the Canadians got second and seventh. The first, second and third prizes for flint corn also went to Ontario.

The Provinces of Alberta and Saskatchewan had group exhibits of grain and hay, and great interest was taken, especially as to the oats. Small samples of oats were given away by the Alberta representative.

The livestock prize winners, while not so outstanding, still go to show what Canadian exhibitors can do. The following are some of the prize winners:

Shorthorns (Breeding Classes). One fourth to J. A. Watt, Elora, Ontario, and two other prizes.

Fat Classes. University of Alberta first in Herefords, second in a group of five of any age or class, and third in Angus class. Wright Farms, Drinkwater, Saskatchewan, second in Grade Yearling steers. This steer afterward made champion shorthorn grade.

Clydesdale Horses. The Grand Champion of the breed went to "Wee Donald," owned by C. A. Weaver, of Lloydminster, Saskatchewan. Messrs. Ness and Son of Quebec, in these classes, took two firsts and one second and three other prizes. Four prizes went to G. W. Muir, Ottawa, Ontario. Four seconds and three thirds went to Saskatchewan.

Percherons. Breeders in Manitoba had one second. Saskatchewan breeders obtained two seconds, and three other prizes.

Belgians. The reserved Union Championship went to Coe Brothers, Regina, Saskatchewan. This horse was first in his class. One third also, and one sixth went to this Province.

Hogs. Manitoba showed up very strongly with the exhibits from the Manitoba Agricultural College, and took eleven firsts, five seconds and three thirds.

Sheep. Robert McEwen and Son, London, Ontario, received twelve prizes in all—six firsts, four seconds, and two fourths with their Southdowns. In Lincolns, J. H. Patrick and Son, Ontario, captured two championships, first for flocks and groups, and all firsts in individuals.

Hay and Grain. In flint corns, Ontario received first, second, third, sixth and seventh.

Hard Spring Wheat. First, J. C. Mitchell, Dahinda, Saskatchewan; second, E. E. Young, Oak Lake, Manitoba; third, F. R. Goman, Oak Lake, Manitoba; fifth, Segar Wheeler, Rosthern, Saskatchewan; seventh, Duke of Sutherland, Brooks, Alberta; and all places up to the 25th place, with the exception of the 11th, 14th, 17th and 22nd, went to Alberta and Saskatchewan.

Durum Wheat. First, R. H. Goman, Oak Lake, Manitoba; second to E. E. Young, Oak Lake, Manitoba.

Oats. In the classes covered by the Provinces of Manitoba, Saskatchewan and Alberta and the North-western States, the first prize went to J. E. Lucas, Cayley, Alberta; second to the Duke of Sutherland, Brooks, Alberta; and all but the sixth up to the fifteenth prize, were divided between these three Provinces. Region No. 2, including the middle United States and Ontario: first prize, B. R. Cohoe, Woodsley, Ontario. This Province also carried away the third and eighth prize.

Barley. Saskatchewan secured two places; Manitoba, one.

Field Peas. E. H. Buckingham, Claresholm, Alberta, first; third, the Duke of Sutherland, Brooks, Alberta.

Alfalfa. The Duke of Sutherland carried off third prize for alfalfa seed.

Grain Sweepstakes. Prizes for wheat were carried off by J. C. Mitchell, Dahinda, Saskatchewan, and J. W. Lucas, Cayley, Alberta.

Irrigation Development in Western Canada

*By A. S. Dawson, M.E.I.C., Mem. Am. Soc. C.E.,
Chief Engineer, Dept. Natural Resources,
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Irrigation in Southern Alberta may be said to really date from 1892, when a series of dry years turned the attention of the settlers to the possibility of saving their crops by the artificial application of water. The question subsequently assumed such importance as to warrant its being taken up by the Government, with the result that well-considered and comprehensive laws relative to the use of water for irrigation were passed; a system of general surveys undertaken to determine the sources of available supply, and the location of the areas where such water could be used to best advantage.

These surveys showed that three extensive areas offered special advantages for irrigation; one containing some 150,000 acres, situated in the Lethbridge District,

which could be supplied from the St. Mary's River; a second, containing about 200,000 acres, lying near the junction of the Bow and Belly Rivers; and a third and much larger one, situated along the main line of the C.P.R., extending 150 miles east of the City of Calgary. It is interesting to note that the works to serve all these tracts have either been built, or are now under construction.

Many Claimed Irrigation Unnecessary

For a long time there were many who claimed that irrigation was unnecessary in Southern Alberta; and it has always been more or less difficult to introduce in a country where the rainfall some years will produce bounteous crops. This feeling has entirely changed; and as a result of several cycles of dry years, the problem now is, where can the water be obtained for the land, and how can the monies be provided to build the necessary works? The matter is not a local, but a national one, which affects a large part of Alberta, as well as part of southwestern Saskatchewan; and therefore the Dominion as a whole. In dealing with so large a tract of territory, there are naturally many local differences in climate, soil, and general topography; but, broadly speaking, the area in which irrigation may be considered as necessary to permanent agricultural development in Alberta, is the block between the International Boundary and a north line running east and west through Drumheller, and east of the west line north and south through Macleod. From this, there should be excepted the higher and rougher lands on the west slope of the Cypress Hills, lying south of Medicine Hat.

Great Smooth Treeless Prairie

This great block is generally comprised of a great, smooth, treeless prairie, suitable for the development of large projects, and where all ordinary field crops can be successfully grown under irrigation.

The block as described contains about fifteen million acres of land, and the large centres to which it is tributary are the cities, Calgary, Lethbridge, Medicine Hat, and Macleod. It is not to be understood that all of this acreage can be irrigated, as some of the physical conditions and the available water supply would not warrant such. The ultimate development of the larger portion of this block must be under dry farming methods, with the smaller irrigated sections scattered through it, creating centres of greater population and production, and assuring to the whole an ample supply of the fodder crops which cannot be grown on dry lands.

Within the block described, the Canadian Pacific Railway Company's constructed projects comprise 743,000 acres irrigable; and under the partly constructed Canada Land and Irrigation Company's project, there are about 200,000 acres irrigable. Comprehensive surveys carried on by the Dominion Government have determined that there are in addition about 600,000 acres which could be successfully irrigated. The total irrigable land in the block is, therefore, 1,500,000 acres, which is only 10% of the whole block. These figures do not represent the total acreage that may possibly some day be irrigated, but only the area commanded by the projects, either built or surveyed.

Irrigation Both Necessary and Desirable

Irrigation is necessary where available rainfall is insufficient to produce profitable crops. It is desirable when available precipitation is insufficient to produce the maximum possible profitable yield per acre. The governing factor is the available rainfall during the crop season; as at other times it may actually be a detriment to successful farming operations. Water is the most essential element to the growth of vegetation. Dry farming is a misnomer, as no crop will grow without water. The essential difference between irrigation and dry farming is the quantity of the water used.

So-called dry farming is the practice of the most efficient methods for the conservation of rainfall that may

be available for the crop, but these same principles apply equally well to irrigation farming. The necessity or desirability of irrigation cannot always be inferred from the annual precipitation, but on the precipitation during the growing season.

The largest irrigation works, constructed to serve portions of the area under consideration, have been built by the Canadian Pacific Railway Company, to serve 650,000 acres east of Calgary, at a cost of about fifteen million dollars, by which water is transported through some 4,200 miles of artificial ditches; and though only partially developed, these lands produced crops in 1919 to the value of over \$6,500,000. This Company also controls what was originally known as the Alberta Railway and Irrigation Company's System, near Lethbridge, which last season produced crops to the value of \$5,500,000 on 82,000 acres—an average of about \$55.00 per acre; whereas the dry land yields were practically failures.

The Canadian Pacific Railway Company is now constructing a system to serve some 17,000 acres of privately owned land near Taber.

Average Irrigated U.S. Farm 57 Acres

Without a forecast as to what the ultimate conditions will be, it may be assumed now that a desirable holding of dry land is something like a half section or 320 acres. A 160-acre irrigated farm is sufficient for one man with ordinary means to attempt to farm. A recent census in the United States showed that in 43 counties, in 11 States, the average irrigated farm contained 57 acres.

No attempt is made to deprecate the value of the so-called dry lands in Southern Alberta. Such a course would be worse than foolish, because there is only a small percentage of the land which can be irrigated; and our great mainstay must necessarily be the dry lands. The irrigated lands must, however, be considered as a necessary adjunct to the dry lands, and irrigation as a specialized line of general agriculture; and as Southern Alberta dry lands have already established such excellent production records, no comparisons made can cast any reflections on them.

Irrigation Increased Production 50 per cent

It is a conservative statement, however, to make that in the block referred to, 160 acres of irrigated land will produce as much or more than 320 acres of dry land, over a period of years, and has, in addition, other advantages, such as the maintenance of soil fertility, and insurance of a crop every year. Moreover, these conditions will result in the population per square mile being almost doubled. Whether we consider one farm or the whole tract, the comparatively small areas of irrigable land are a most valuable adjunct to the larger areas of dry lands, as they will always be the source from which forage crops will be produced.

The conditions are entirely different in the northern half of Alberta, and a line drawn east and west through the town of Red Deer might be considered a dividing line.

In the southern portion of the province, the precipitation varies from 10 to 15 inches per annum, as against 25 to 40 inches in the northern part. In 1918, the total precipitation at Lethbridge for the year was only 7.6 inches, of which only 4 inches fell during the growing season. In 1919, the total was 12.3 inches, of which 7 inches fell during the growing season. The precipitation varies very much from year to year, and month to month, and settlers never know what to expect.

Farmers Themselves the Advocates

Records between 1903 and 1919 show that to get the best results, the land should have over half an inch of moisture about every 20 days, during the growing season. In these 17 years, there were fourteen with drought periods of over 35 days, and ten with drought periods of over 30 days.

The success which is obtaining on the irrigated lands of Southern Alberta can only be fully realized by a personal

inspection of the districts and conversation with the men on the land. Comfortable homes, surrounded by trees, shrubs, alfalfa and timothy fields, are a real evidence of what can be done in a remarkably short time. The most authentic demonstration work on record are the field tests carried on by Mr. W. H. Fairfield, Superintendent of the Dominion Government Experimental Farm, at Lethbridge, covering the period from 1908 to 1918, inclusive.

With Marquis Wheat, the increased yield due to irrigation was 23 bushels or 77%.

With Banner oats	38 bush.	or	54%
" Barley	35 "	or	81%
" Field peas	14 "	or	51%
" Potatoes	250 "	or	105%

In comparing results of the yields in grain on the dry and irrigated lands, it is only fair to point out that on the dry land the crops have invariably been planted on summer fallowed land, so that, to be really fair in the comparisons, the yield on the dry lands should be divided by two. For on the irrigated land a rotation system was followed, and no summer fallow was done; that is to say—a crop of some kind was produced every year on the land.

On the irrigated portion of the station, their average yield for cured alfalfa for the past ten years has been considerably over four tons per acre; some seasons it has exceeded five tons per acre. Timothy hay has averaged from one and a half to two tons per acre during the same period.

Irrigation spells diversification, and more intensive farming than is the case with straight grain growing on dry land. To be able, in our short seasons, to irrigate the crops in the most advantageous manner and at the proper time, they must be diversified and so arranged that it will not be necessary to irrigate the whole area at one time, as would be the case were one raising grain exclusively. This diversification means that there will be certain parts of the farm devoted to hay and pasture. It means that the livestock holdings will be vastly increased; and with the carrying of live stock on the land, the question of an adequate supply of humus in the soil will be solved. This in itself will modify to a great extent the troubles we are experiencing in soil drifting.

The weed problem will be taken care of and disappear to a large extent, because weeds that thrive in grain disappear when the land is seeded down to alfalfa. If the land has been seeded down to alfalfa for a few years, it is richer than ever for grain growing; and so the cycle is completed and more staple and permanent conditions are established.

Smaller Holdings, Larger Population

The natural outcome of this change of conditions will, without doubt, mean smaller holdings and larger population. It will mean better roads and better schools; and social conditions generally will be improved, as a result of greater production per annum per acre.

A conservative estimate of the additional cost per acre for farming under irrigation methods is about \$4.00 per acre, including the cost of land preparation, ditching, and irrigating, the ordinary maintenance charge of about \$1.00 per acre, and interest on the additional purchase price of irrigable land over dry land.

The Canada Land and Irrigation Company has published reports on an irrigated farm, containing 84 acres, being operated by that Company, on which, in 1918, the net profit was \$4,254; the crops being alfalfa, field peas, potatoes, corn and garden truck, and during the years 1915, 1916, 1917, and 1918, carried on a series of experiments, in conjunction with the Irrigation Department of the Dominion Government, on crops, including alfalfa, wheat, oats, barley, peas, potatoes, and sugar beets, on both dry and irrigated plots. Applying their results to a 160-acre tract, containing 100 acres of alfalfa, 30 acres of oats, 10 acres of barley, 10 acres of peas, 5 acres of potatoes, and 2 acres of garden produce, the average increase per acre was as follows:—

1915-16 (two wet years),	\$30.36 per acre.
1917-18 (two dry years),	\$79.06 per acre.
1915 to 1918—average for four years,	\$51.00 per acre.

Probably the largest returns ever produced from 12 acres in the prairie provinces were those obtained in 1919 by a farmer near Brooks, Alberta, who obtained 14 bushels, or 784 pounds of alfalfa seed to the acre. This was sold at 85 cents per pound, representing a return of \$666 per acre, or \$7,992 from the 12 acres. The price subsequently advanced to \$1 per pound.

It may be of interest to know that an analysis of the statistics of the irrigation projects of the United States shows that 60% of the gross revenue received from all the products of irrigated land comes from alfalfa.

The results which have been obtained in the past, with sunflowers for silage, producing 30 tons per acre; with sugar beets of exceedingly high sugar content, producing as high as 25 tons to the acre; and with alfalfa, field peas, and clover seed, are only possible under irrigation methods.

Outlook for the Future

After referring, somewhat generally, to results on irrigated land so far obtained in Southern Alberta, let us turn to the future.

The policy of the Dominion Government has been to make the surveys to determine the feasibility of developing certain areas under irrigation, but has never undertaken any actual construction. This phase of development was handled by companies, who held large blocks of vacant land, constructed the works to serve them with water, and then sold to new settlers, with a perpetual contract for a supply of water to the lands, at a fixed annual charge.

This form of enterprise has developed all the large projects constructed up to date. These conditions are now changed, because the large areas that still await development are practically all settled, and people are on the land. The proposal is to develop these areas by co-operative effort of the land owners themselves; and the necessary machinery has been created by the Provincial Government in passing the Irrigation District Act.

The Act provides for the formation of Irrigation Districts, with power to raise the necessary funds to construct the irrigation works by selling bonds, the security for which is the land within the district.

A diagram showing the actual monthly rainfall in Southern Alberta is all ups and downs; the production on the so-called dry lands shows these ups and downs; following that our business conditions are all ups and downs. The financial condition of the individual farmers is reflected in the financial conditions of the country. Agriculture is the basic industry of this section. Irrigation stabilizes agricultural production, and therefore stabilizes business conditions. It is not so much hail insurance or frost insurance we require as drought insurance; and this can only be provided by the construction and operation of well designed and well built irrigation systems. I have been well informed that a mortgage has never been foreclosed on an irrigated farm in Southern Alberta; and in some of the irrigated districts, it is now generally conceded that a full water right about trebles the selling value of a farm. To summarize:—

The Benefits of Irrigation

The chief benefits of irrigation in Southern Alberta may be stated to lie in the following directions.

First, as providing a valuable insurance against losses from drought which are known to occur at certain periods of each year, and long droughts which do occur in certain seasons.

Second, the production of larger yields of grain with the application of water at critical periods in its growth.

Third, the production of larger yields of alfalfa, timothy, and other fodder crops, necessary for the up-building of the livestock industry, and the general adoption of mixed farming methods.

Fourth, additional population on smaller holdings, and the possibility of creating real homes on the treeless plains.

Moisture is the basis of agricultural success in Southern Alberta, as it has been in all other semi-arid countries; and this is what leads up to the tremendous importance of the matter of the financing of these irrigation projects.

With the irrigated areas constantly growing, and ordinary agricultural development proceeding, there is no reason why this part of Alberta should not be one of the

most productive portions of Canada, and this system of farming will ultimately become a leading factor, and occupy a vitally important place in the agricultural development of Southern Alberta.

Canada's Expanding Apple Market

The fall of 1920 saw the Canadian apple further extending the scope of its popularity and seizing additional foreign markets in its onward march. Canada's diversity of soil and climatic conditions makes for the production, throughout the different provinces, of a fruit of varying quality and properties, but the wide sale fruits from both Atlantic and Pacific areas enjoy, upon export to widely scattered portions of the globe, would indicate the favor with which the product of every section is accepted.

Considerable fruit, and of a very excellent quality, is raised in the Provinces of Ontario and Quebec, the normal production for each being about 100,000 barrels annually. This, however, does not even satisfy local demand, so that not only is there none of the fruit available for export but importations from other provinces are necessary. The apple-exporting provinces of Canada are Nova Scotia and British Columbia, and the names of Annapolis Valley in the former and Okanagan Valley in the latter have, from the fame of their high-quality product, become familiar in the fruit markets of the world. In 1919, Nova Scotia produced approximately 2,000,000 barrels of apples, whilst British Columbia's crop of 3,600 carloads was worth \$5,250,000 to the growers.

Increasing Popularity Abroad

Whilst a portion of the British Columbia apple crop finds its way to Ontario and the prairie provinces and that of Nova Scotia is always to be found in Western Canadian cities, the principal outlets for export are the British Isles and the United States. The British Isles forms the largest export market for Canadian fruit, which has for years been growing in favor there. In 1919, of a total of 420,610 barrels of apples imported into the United Kingdom, Canada supplies 226,175, or more than one-half, and indications are that shipments in 1920 will bring Canada's aggregate and quota to much higher figures. Certain sections of the United States also provide markets for the Canadian apple crop, and a gratifying feature in the past few years has been the appeal which British Columbia apples has made to United States wholesalers and consumers.

The Okanagan Valley, through its energetic and progressive fruit growers' associations, has, of recent years, made strenuous efforts to build up an export market and these endeavors have been attended with satisfying results, so that already the market covers an extensive foreign field. From little towns in the picturesque valley, large shipments have been made this season to England and Scotland, to New York

and other United States points, to New Zealand and Australia, whilst carloads consigned to Montreal for reshipment had undesignated destinations in foreign countries.

New Markets Continually Opening

Energetic growers of the valley are continuously opening up new markets, which the fame which has preceded the fruit simplifies, as witness the recent large shipment, a first venture, to Cleveland, Ohio, where the consignment was received on its first appearance with favor and exhausted within a short time of its receipt. The British Columbia apple is now so popular in the United States that a large portion of the 1920 crop was purchased by American dealers whilst yet on the tree, and at prices in excess of those prevailing at the time of purchase.

Nova Scotia has a splendid market for its apples in the British Isles, where the fruit has been a steady favorite for many years. This footing has been considerably strengthened since the harvesting of the 1920 crop and a still more insistent demand created. In 1919, the Province of Nova Scotia shipped a total of 1,584,000 barrels of apples, of which 432,000 barrels went to the markets of the United Kingdom. Up to the end of November, 1920, the shipments for English ports from the season's crop totalled 485,000 barrels, or more than those for the entire previous season.

Nova Scotia Product in Demand

A considerable portion of the crop of this province also finds its way to the adjacent market of Newfoundland, whilst every year carloads going to the Eastern United States markets are favorably received.

Opportunities for the marketing of a portion of the Canadian apple crop in continental countries, discussed by F. Forsyth Smith, Canadian Fruit Trade Commissioner, in a report to the Department of Trade and Commerce just published, says:

"It is to be hoped that Canadian exporters have taken steps to get into touch with the many Scandinavian importers, who have expressed an interest in developing business with Canada. Unfortunately, Norway, one of the most promising markets, has placed an embargo on imported apples, but Denmark and Sweden are doing an important business with the United States and should not be neglected by our shippers. The embargo on apple importation into France has been removed, and, while exchange conditions will make business difficult, interested inquiries from French importers have been received."

Apple growing is undoubtedly on the increase in Canada, and as the number of provinces which can supply their demand from within their own confines increases, a still larger export trade can be built up.

The prairies have exhibited their adaptability to producing certain species, and the time is forecasted when the apple orchard may be an adjunct of every prairie farm home.

The Peace River Country

The common conception of the Peace River District in Northern Alberta is that of a semi-arctic region as yet only half-explored, progressing but slowly at the cost of the toil and privation of pioneers, a country of the future possibly—but a future yet remote.

Against this stands the fact that a hundred years ago, when the wealth of this northern area was apparently realized, when the Hudson's Bay Company had established posts throughout the region and were taking from it furs of inestimable worth, the plains to the south, now the greatest contributor to the world's granary and meat market, were considered as barren vast fit only for the buffalo and the coyote and of no value in comparison to the obvious richness of the north.

In western history the fact stands out that as far back as 1876, when the agricultural productivity of the west was yet problematical, wheat grown at Fort Chipewyan, a post established by Roderick Mackenzie, a cousin of the great explorer of the same name, secured the first prize at the Centennial Exposition at Philadelphia. This was followed up by another record in 1893, when the prize-winning wheat at the Chicago World's Fair came from the Shaftesbury Settlement, fifteen miles from Peace River Crossing.

Its Agricultural Wealth Proven

Following the settlement which has taken place in the past few years, the names of Grande Prairie, Pouce Coupe, Spirit River, Fort Vermilion and Lake Saskatchewan have become renowned in western lore from their productive capabilities, whilst that large region from the White-mud River to Dunvegan Crossing as far west as Fort St. John and Hudson's Hope in British Columbia, has proved its agricultural worth after years of successes.

As the region is attracting to it so many settlers, there being a large number of ex-Canadian soldiers among them, many false ideas of this country, which persisted in spite of proof to the contrary, are being eradicated. We know now that it possesses a climate which surpasses in value

that of the country to the south of it, with a longer growing season and a milder winter. Crops this year raised on the land tributary to the two railroads are estimated to amount to between 2,500,000 and 3,000,000 bushels. Little wonder then that this year, farmers have been flocking in to file on the rich agricultural lands, or that ranchers have been attracted by the luxuriant verdure of the park-like expanses and the mild prevailing winters.

The discovery of oil in the Mackenzie River basin has drawn fresh interest to the country, and the finding has been described as the most important discovery in the history of Canadian development since the striking of gold in the Klondyke. The strike occurs in a territory embracing a vast extent of the same geological formation, encouraging belief in the possibility of widespread deposits. Certain it is that there is much oil in the region as the huge areas of tar sands indicate.

A Possible Pulpwood Supply

A great forested area containing white poplar and spruce lies between Edmonton and the Peace River country, which is attracting a good deal of attention at the present time as a possible resource of pulpwood supply in view of the enormous demand which the exploited regions of Canada are being taxed to satisfy. Farther back in the interior of the country, where the land assumes the aspect of a well laid out park, large stands of the same class of small timber are to be encountered, all of which will have a considerable future value.

Another source of important revenue which is developing rapidly and assuming greater commercial importance each year, is the inland fishing industry of

the lakes which abound in this territory. Whitefish and other lake fish are now brought down in large quantities and supply not only the Alberta market, but that of eastern Canadian cities, and have also attracted the favorable attention of New York and other eastern cities of the United States.

In the coming spring, a total of \$500,000 will be spent on the Mackenzie River fisheries for the maintenance of a fishing fleet and other kindred operations. The growth of the industry, which commercially is very young, has already justified the establishment of a cannery on Lake Athabasca, completely equipped with modern machinery and employing more than 100 men. This company, when it secured its fishing rights last summer, stated that it expected to catch and can 70,000 pounds of fish daily.

Wheat, Oats, Barley and Cattle

The production of wheat in 1920 is estimated at 400,000 bushels as against 370,000 in 1919; barley, 250,000 bushels as against 50,000; oats, 2,000,000 bushels as against 1,500,000. There are from 25,000 to 30,000 head



of cattle in the district, 7,000 horses, 6,000 sheep and 12,000 hogs. During the fiscal year ending March, 1920, there was a total of 797 homestead entries, 560 soldier grants, 38 land sales, 383 applications for patents, 232 grazing leases granted, 297 timber permits taken out, 431 hay permits secured, and 600 applications for petroleum leases. These figures speak for themselves in regard to the popularity of this country with the modern pioneer, and bear tribute to the flow of people one year witnessed into this area.

The progress of the Peace River district has been somewhat hampered in the past by the lack of railway transportation, and general satisfaction is expressed at the taking over for operation of the Edmonton, Dunvegan and British Columbia Railway by the Canadian Pacific Railway. This year, in addition to the large yield the area has obtained, there is a considerable portion of the 1919 crop yet to come out, all of which will be shipped down to Edmonton during the winter months.

The past year has been a most encouraging one for settlers in this region and for those contemplating settlement there. The spring will doubtless see a yet greater flow of agriculturists into the yet unsettled portions north of the railway to supplement the grain growing, mixed farming and ranching, which have proved so successful in the past and are making the Peace River country one of the most promising agricultural areas of the Canadian west.

Canada Astonishes Texas

Corn grown at Kelwood, Manitoba, by John Hamilton, exhibited recently in open competition at the Texas State Fair, carried off the first championship honors, winning out against the premier exhibits of one of the first corn growing sections of the globe. If Texas previously lacked interest in Canada, their astonishment has changed the situation and Texan farmers have their eyes on the wonderful things she is capable of in the agricultural line.

In addition to running off with the first prize for a product, which is generally believed to belong to belts much farther south, Canada produced other apparent anomalies in the way of prairie-grown crab apples, white cherries, and giant strawberries. Again, there was honey produced on prairie farms which brings back to memory the fact that in the honey contest at the convention of beekeepers from all over the world, held in Switzerland in 1913, the first prize went to the product of the Province of Manitoba.

Exhibit Arouses Much Interest

These Canadian products, including the corn which was of similar kind to that which secured the world championship at the International Soil Products Exhibition at Kansas City a few years ago, were part of a Canadian exhibit which also contained grains for the growing of which the Western Provinces have achieved world-renown and secured many international honors.

The exhibit aroused considerable interest and caused genuine astonishment at the fine displays of agricultural products, many of which the beholders had previously associated solely with climatic conditions to be experienced much

farther south. The exhibition demonstrated concisely the extent and diversity of Canadian natural wealth along agricultural and mineral lines.

The Corn Belt's Northward Trend

When Canada successively secured the world's championship for wheat growing, universal interest was revived at the steady northward trend of the wheat belt. Now it would appear that the corn belt is undergoing the same process if we are to judge by the international successes of the corn product of Canadian prairie farms, and the general enthusiasm with which the growing of this grain is being taken up. In fact, the prairie refuses to remain in the position assigned to it by tradition and opinion unsupported by experience, and has proved its adaptability to many lines of agriculture previously conceived to be entirely outside its scope.

British Columbia Pulp and Paper

The birth and development of the pulp and paper industry in British Columbia has been phenomenal. A decade ago not a single ton of pulpwood, mechanical or chemical, was manufactured in the Pacific Coast province; in 1919 the total value of the products of this industry amounted to \$12,554,257. To-day, British Columbia stands third among the provinces of the Dominion in the amount of capital invested in the industry. The surprising rate at which this has grown in the last few years and is continuing to grow, is indicated in the jump effected between 1917 and 1920 of from \$22,584,652 and \$50,000,000 in 1920.

This is a remarkable history of development of what will doubtless become one of the most important industries of the Pacific Coast, but it is more than probable that the next decade will exhibit still more rapid expansion. Great Britain and the United States are drawing the greater part of their paper supplies from Canada, and eyes are turned on British Columbia, possessing as it does the largest remaining stands of timber in the world suitable for the production of pulp and paper. The province's annual export to Australia already amounts to more than 20,000 tons, whilst the demand for pulp from the far east far exceeds the present available supply.

Nearly Three Hundred Million Cords

Of the 370,370,000 cords of pulpwood estimated to exist in Western Canada, British Columbia is credited with 285,370,000 cords, consisting of spruce, western hemlock, and balsam, whilst for the coarser grades of pulp a certain amount of Douglas fir is used. It should

also be observed here that British Columbia is highest among the provinces of the Dominion in the average production of pulp per cord of wood, the mechanical process giving an average of 2,485 pounds.

To-day there are only seven plants in British Columbia producing pulp—groundwood and chemical—and newsprint. No other industry offers such boundless opportunities of development. In addition to the enormous areas of suitable timber are the tremendous unharnessed water powers awaiting utilization, which are estimated at 3,000,000 horse power. The temperate climate of the Pacific Coast gives assurance of open harbors the year round, whilst apart from the demand in the United States, there is an unlimited market for the product of the mills immediately across the ocean.

No Export Embargo on Raw Product

This may be instanced from the fact that the entire pulp product of one of the largest mills on the coast goes to Japan for manufacture there into newsprint. Up to the present time the Provincial Government has placed no embargo on the export of the raw product.

British Columbia is producing sufficient newsprint to supply the whole of Canada, taking the most recent estimates of the annual consumption of 120,000 tons. Figures of the province's output of pulp and paper of all kinds for 1919 were as follows:—sulphite, 80,047 tons; sulphate, 9,473 tons; ground wood, 99,769 tons; paper: newsprint, 123,607 tons; wrapping, 7,202 tons. In newsprint production British Columbia already stands third among the Canadian provinces.

From the standpoint of timber resources, water powers, climate, shipping, a bright future awaits British Columbia in the pulp and paper industry, and the coming decade will see it placed high among the paper producing sections of the American continent.

A Tribute to Canadian Investment

Interest in Canada from across the line was never greater than in the year just past. It covered all phases of activity, all lines of endeavor. Tourists flocked northwards in thousands to holiday among the beauties of Canadian scenery; farmers came up to secure holdings of the Dominion's cheap fertile land; capitalists, prospectors and chemists were attracted by the wealth of natural resources; and investors found Canada an increasingly profitable field for investment.

It is impossible to state accurately just what amount of American capital is invested in Canada, but authorities variously estimate it at from \$1,250,000,000 to \$1,600,000,000. This

amount is rapidly increasing every year, it being authoritatively stated that money from across the international boundary is flowing northwards at the rate of \$200,000,000 annually to be invested in Canadian industries and securities.

A Field for American Investment

A warm and gratifying tribute to Canada as a field for American investment and the sterling worth of Canadian securities for the expansion of American capital is paid by the brokerage firm of Peabody, Houghteling & Co., of Chicago, in a recent issue of their market publication.

"Many years ago," they say, "looking to the future as well as the immediate opportunity, we began to investigate Canadian industries as a field for the investment of American capital and to purchase with our own funds, for distribution among our clients, such issues of securities as we could unreservedly recommend. Our confidence in Canada has been amply rewarded by a long and steadily growing list of customers who request Canadian securities for the investment of a substantial part of their savings."

The reason for the increasing favor with which Canadian industrial bonds and notes are regarded is not far to seek, the letter proceeds. Six national characteristics which buyers should look for in planning to place their funds in foreign securities are enumerated: (1) Governmental stability to secure law and order; (2) Personal energy, initiative and thrift among the people; (3) High credit, both public and private; (4) Rich and varied natural resources; (5) Rapid rates of growth in production and population; (6) Prompt and reliable transportation and banking facilities.

Six National Characteristics

Canada, the article asserts, possesses all six national qualities in a marked degree, which conclusion is drawn from a long period of practical experience.

Canada, the writer states in conclusion, as regards energy, natural resources, and growth, stands much where the United States did a generation or two ago. It is a young country with all the driving force and recuperative power of youth. Its past achievements, great as they have been, will look small in the light of what the future development of its untouched farm lands, minerals, and forests will produce.

A University Course in Banking

Recent developments of banking interest to the general public are the University of McGill Bankers' Extension Course and the announcement by the Minister of Finance for British Columbia of the intention of the province to establish a provincial bank.

The campaign by McGill to raise \$5,000,000 as an endowment fund to aid the University to improve buildings, general conditions and extend her educational facilities, met with the success that was expected; and with the \$6,500,000 odd that was donated, and under the able direction of Principal, General Sir Arthur Currie, she is preparing to carry out those improvements and betterments that will make the University rank with the foremost educational institutions in the world.

Whether it is due to the result of the Centenary campaign or not, the University has already inaugurated an extension course of lectures on banking under the charge of Messrs. Stephen Leacock, B.A., Professor of Political Economy, R. C. McMichael, K.C., B. K. Sandwell, B.A., Asst. Prof. Economics, and one of Montreal's chartered accountants.

The Course in Banking

The banking course, which commenced early in December and will run till the end of March, provides opportunity for students of banking to improve their knowledge and fit them earlier for promotion and executive positions, and is warmly welcomed by the banking fraternity. It includes lectures and discussions on the Theory of Value; The Value of Gold; Silver as Money; Paper Money; Bank Deposits and Cheques; War Credit and Inflation; The New Bankruptcy Act; Analysis of a Company's Balance Sheet; Marine Insurance, and the organization of corporations, stocks, banks, etc.

The Financial Policy of British Columbia

In announcing a financial policy for British Columbia, Mr. John Hart, the Minister of Finance, states that it is the intention of the province to establish a provincial bank so that the Government can assist dependents and keep the money of the people in the province for local development, also to establish a reserve fund in which all monies from the sale of natural resources must be placed. This capital fund, he stated, would never be impaired, but loaned out on interest for the development of British Columbia.

Bank Literature

Many Canadian banks issue regular monthly House Organs and Commercial Letters. Amongst those publishing House Organs are the Canadian Bank of Commerce, the Home Bank of Canada, the Union Bank of Canada and the Royal Bank. All are finely printed and illustrated and in addition to their purpose of keeping members of the staffs interested and informed regarding current bank news, carry many excellent articles of general public interest.

A little book entitled "Service in Banking," by the Home Bank, has recently been published. As its title indicates, it deals with courtesy and service on the part of bank members to the public, the General Manager, Mr. J. Cooper Mason, stating in a brief foreword that it is:

"To place in the hands of every member of the staff a memorandum that may contribute to enliven their resolve to maintain an appreciable measure of service in the various departments of banking."

Industrial Outlook in Western Canada

*By John Sweeting, Industrial Agent,
Western Lines, C.P.R.*

A trip through the West from Fort William to Vancouver in the early part of December disclosed an attitude of uncertainty apparent in all business circles. The evident desire on the part of the retail trade to reduce stocks of merchandise with large reduction in prices was, apparently, not attracting a very great desire to purchase on the part of the public, but at a later date, nearer the middle of the month, business commenced to pick up and showed signs of usual Christmas activities, and prospects are on a better footing than they have been for some time past.

Resumption of normal business will have a steadying influence, with perhaps a slight upward movement in prices followed by a decline to a point where the laws of supply and demand will fix definite trading values.

Bank clearings, deposit accounts, crop clearings, value of crop and other factors, all point to a sound financial and healthy condition existing in the West. Labor, until the last few weeks, has been fully employed at high wages, whilst now a certain amount of unemployment exists, more especially in coast cities; there is nothing, however, very unusual in the situation this year as against other years in this respect.

As undoubtedly, with the turn of the year, there will be a steady westward movement of merchandise, farm machinery and other articles to replenish stocks in preparation for spring and summer trading, the present effort to sell out existing stocks is a natural one. In a general way, replacement prices are the rule, and it is purely an act of natural economics in preparation for stabilized prices, as against those which were caused by conditions pertaining to a world war.

The Outlook for 1921

Much can be said of the outlook for 1921. There are many things in the doing and much to be done. The housing situation is demanding vital attention. The reduction in lumber and other building material prices, together with a readjustment of wages and labor conditions,

will assist in the carrying out of a large programme. It is not merely alone the question of housing, as there has been, for some two or three years, a shortage in storage and public buildings and utilities, that must be available to take care of the ever increasing influx of immigrants, and consequent enlargement of trade. As an illustration, the Province of Saskatchewan in its budget, brought down during the month of December, makes provision for an expenditure of over three million dollars for public buildings, eight hundred and fifty thousand for public improvements and one and a half millions for telephones.

Prospects for immigration would seem to be determined entirely by the amount of space that will be available on ocean liners and the ability of transportation companies to take care of prospective requirements. There is very little doubt that desirable settlers in large numbers will come to the Canadian West during the coming year, and this factor, together with the prospective amount of building and reclamation schemes, irrigation works, railway construction, re-opening of lumber mills, manufacturing enterprises, more activity in mining centres, both on the prairies and in British Columbia, bids fair to make the year one of pronounced trading value.

C.P.O.S. Atlantic Summer Season

By Andrew McDuff, Colonization Agent, C.P.R.

Of first importance in national construction, in so far as an immature expanding country such as Canada is concerned, is the question of immigration—the flow of new blood and peoples to make future citizens of the country.

The various steamship companies play a big part in Canadian immigration traffic, and their operations have a direct effect upon the manner in which it is conducted and regulated, and on other matters of kindred importance to the future of the country and the peoples they are introducing. By co-operation, active and moral, with the government authorities, many trivial issues, which badly handled might later turn into vexing questions, are obviated, or in some manner satisfactorily adjusted.

Made 76 Trans-Atlantic Voyages

The greater portion of Europe's emigrants to Canada are served by the C.P.O.S., and this year the closing of the waterway of the St. Lawrence for the winter season saw the conclusion of a record season. From May 3rd, when the "Victorian," sailing up the St. Lawrence opened the summer season, till November 28th, when the departure of the "Empress of France" from Quebec signalized its end, the

thirteen vessels serving the Atlantic (and the temporarily loaned Prinz Friedrich Wilhelm which made four trips under the company's flag) made seventy-six trans-Atlantic voyages.

In the course of these trips from Europe, a total of approximately 97,000 passengers were carried to Canada. From records kept nearly 64,000 of these were newcomers who declared their intention of remaining in the country, making permanent homes and becoming Canadian citizens. The grand total of passengers, east and westbound, was 150,698.

Of these incoming embryo citizens, the overwhelming majority were British from the United Kingdom, whilst our allies, France and Belgium, contributed a more than ordinary quota to the flow. Denmark, Sweden, Norway and Holland were likewise well represented, and lesser streams proceeded from Spain, Poland, Italy, Greece, Finland, Roumania and other European countries.

The striking characteristic of the crowds seen landing at Canadian ports from these vessels has been the consistent high type of emigrant, in harmony with the Dominion's policy of selected immigration. New settlers from the British Isles have been of this order, and the steady stream, that has made a course from the port of entry to the fertile western plains, has taken with it much capital.

France, Belgium, Holland and Scandinavia

From France, Belgium, and Holland most of the entrants have been specialized agriculturalists with capital of both experience and wealth ready to go on the land immediately and become producing assets.

The Scandinavian countries contributed many experienced farmers who, having disposed of their holdings in the old lands, were financially and intelligently capable of commencing new operations without undue delay. Generally speaking, the European settlers of the past summer season have been of the class of which desirable citizens can be made without any but their own efforts.

As an organization interested in national progress and development along sound lines, the Company is desirous of seeing that emigrants turn their feet in the right direction in order to achieve prosperity in whatever lines they propose to follow. To aid, in view of the large numbers of travellers who have no knowledge of English, an interpreter has been placed on each of the Company's vessels sailing from European ports. This measure has already justified itself in the assistance it has offered, not only to the emigrants who are continually seeking information on a multitude of matters, but to the ship's officers and the emigration authorities in facilitating their work with the passengers.

Assisted by Colonization Agent

Another action towards the same end is an inauguration during the year of the appointment of a Colonization Agent by the Department of Colonization and Development. This agent meets all vessels and renders every possible assistance to travellers, with their baggage, answering questions, giving information on the wide variety of subjects demanded, and generally advising on the new life they are about to take up under conditions strange to many of them.

With the closing of the summer season and the inception of Atlantic voyages terminating at St. John, the C.P.O.S. instituted a Marconi wireless service of purely Canadian news to their vessels on the seas. Whilst the news report supplied in the past by English and American stations will be continued, the addition of bulletins of solely Canadian items keeps Canadian travellers and others interested in Canadian development in close touch with daily changes.

The C.P.O.S., which has had such a busy record season, is prepared for the still greater rush presaged in the spring from European countries, more especially from the British Isles.

A further extension of the Company's operations which the opening of the summer navigation season on the St. Lawrence will see inaugurated is a Canadian-Italian service. An arrangement has been entered into with the Navigazione Generale Italiana which provides for a direct service from Montreal in the summer and St. John in the winter to Genoa and Naples—the latter to be the terminal port. The Italian company will employ one of their finest passenger ships on the route, in conjunction with a German vessel which has recently been acquired by the C.P.O.S., to be re-named the "Montreal." Third-class travel between this country will be revived by the service, and arrangements for immigrants will be made at the Italian ports as well as in Montreal, where accommodation for one thousand such passengers will be provided.

The passenger tonnage on the Atlantic at the end of the late summer season was about 155,500. This is to be increased in the opening months of the new summer season by the addition of the "Montcalm" and "Montrose," each of 16,200 tons, 566 feet long, 70 feet broad, and a speed of 16½ knots.

Hydro-Electric Power in Ontario

By W. L. Edwards, Dept. Public Information, Ottawa.

The absence of coal-bearing strata from the geological structures of the Province of Ontario has, to some extent, been compensated for by the natural distribution of numerous lakes and rivers from which hydro-electric energy could be derived. One has but to glance at a map of the province to note the distribution of these lands and

rivers so widespread that there is scarcely any considerable area in Ontario beyond transmission reach of hydro-electric power.

To describe in detail the various rivers within the Province of Ontario capable of generating hydro-electric power would be to expand this article to the proportions of a book. A brief reference, however, to the more outstanding of these rivers will be sufficient to obtain a fairly good conception of the enormous water power resources of the province.

A Potential Source of Power

From a practical standpoint, the Niagara river comes first in importance as a potential source of hydro-electric power concentrated at one point and advantageously situated as regards centres of population and industrial development. It has an inflow from Lake Erie of 210,000 cubic feet of water per second, from which the potential possibilities on the Canadian side are 1,500,000 h.p. of hydro-electric energy.

Though, perhaps, second to Niagara as regards practical consideration of development, the St. Lawrence river has actually greater potential power units, approximating in all some 2,000,000 h.p. within the province.

The Ottawa river, which in itself is capable, between Lake Temiskaming and Carillon, of developing 600,000 h.p., and with its tributaries 688,000, is third in order of importance.

The estimate of the Dominion Conservation Commission of a minimum aggregate capacity of 665,000 h.p. for the rivers of Ontario entering James Bay, would rank that district fourth in order of importance. Then there follows that part of the Montreal river within the province, with water powers capable of developing 250,000 h.p.; rivers tributary to Lake Superior capable of 195,000 h.p.; rivers tributary to Lake Huron, with a potential capacity of 166,000 h.p.; rivers on the Hudson Bay slope, 250,000 h.p.; three undeveloped sites on the French river, each capable, with storage at Lake Nipissing, of developing 10,000 h.p., and the Trent river, with its tributaries, 75,000 h.p.

Hydro-Electric Power Installed

Thirty years ago, all that the Dominion could boast of possessing in hydro-electric power installed was 4,500 h.p. Up to the beginning of January, 1920, according to figures compiled by the Bureau of Statistics at Ottawa, the Province of Ontario has plants installed capable of producing 1,015,725 h.p. for hydro-electric energy, or rather more than 42 per cent. of the total for the Dominion as a whole. Compared with population, it means 369 h.p. for every one thousand of the inhabitants of the province.

A most important feature in connection with this 1,015,725 h.p. is that, for certain purposes, it may be estimated as approximately equal to 20,000,000 tons of coal. As the plants under actual construction will bring the installed hydro-electric power up to about 1,500,000 h.p., it follows, without even taking into account future new enterprises, that the Province of Ontario will within the next year or two have in operation hydro-electrical power equivalent to 30,000,000 tons of coal. This figure is one-third in excess of the average tonnage of coal imported annually during the last few years. In so far, therefore, as hydro-electric power can be economically and practically substituted for the purposes for which coal is employed, the province may in the future, to that extent, become independent of imported coal.

Principal Hydro Developments

The scene of the principal development, and one which is likely to maintain the premier position for many years to come, is the Niagara district. In the immediate vicinity of the Falls, on the Canadian side of the river, there are in continuous operation three large hydro-electric plants, the aggregate output of which is about 450,000 h.p.

When the Chippawa to Queenston canal is completed, which is expected to be some time in 1921, and the power plant near the latter town is brought into operation, with its normal capacity of generating 300,000 h.p. of hydro-electric energy, the grand total will be about 750,000 h.p., or an increase of two-thirds over the present supply. The ultimate capacity of the Queenston plant is expected to be about 650,000 h.p. The total available potential h.p. on the Canadian side of the Niagara is conservatively estimated at 1,500,000 h.p., thus allowing room for considerable further development even after the Chippawa-Queenston plant is developing its maximum.

At Decew falls, on the Niagara escarpment, is a plant of nearly 60,000 h.p. capacity, distributing electric energy to Hamilton, Brantford and other towns in the western part of the province. The development of hydro-electric power on the Niagara river proper was started in a small way in 1895.

Lakes Ontario and Superior Tributaries

On the Trent, which is the most important river emptying into Lake Ontario, there is, according to the latest figures available, 45,000 h.p. being developed between Balsam Lake, the highest point on the system, and the town of Trenton, its outlet.

In the upper part of the Ottawa Valley there are a number of hydro-electric plants of more or less importance in operation, the most important of which supplies power to Cobalt and the mines in that part of the province. On the Ottawa river proper, the most important development is at the Chaudiere Falls, where 36,000 hydro-electric h.p. are developed and distributed in the City of Ottawa for power, electric light and street railway purposes.

On the tributaries of the province running into Lake Superior, there are being developed, according to the latest available figures, about 25,000 h.p., the larger part of which is utilized by the twin cities of Port Arthur and Fort William for various purposes, while the balance is distributed to the plant of the Algoma Steel Company, the mines in the Michipicoten district, and other industrial concerns.

When the plant now in the course of construction on the Nipigon river by the Provincial Hydro-Electric Commission is completed, providing as it does for a present supply of 25,000 h.p. and an ultimate of 75,000 h.p., the developed power on the tributaries of Lake Superior will at least be doubled in capacity. The Nipigon is the largest of the rivers emptying into Lake Superior, and being forty miles long, with a drop in that distance of 255 feet, and Lake Nipigon with its 1,500 square miles as a source of supply, obviously constitutes a valuable asset of hydro-electric energy.

Hydro-Electric Commission Operations

The most important individual developer and distributor of hydro-electric energy in Ontario is the Provincial Hydro-Electric Commission. This Commission came into existence in June, 1906. The members are appointed by the Provincial Government, but it works in connection with the various municipalities to whom electric energy is supplied. The bonds which the Commission from time to time issues for the purpose of financing its various enterprises are guaranteed by the municipalities concerned and endorsed by the Government.

The Commission began the construction of transmission lines in 1909, several hundred miles of which were completed by the end of the following year. The original supply of power was obtained from the Ontario Power Company, one of the Niagara concerns, with whom a thirty year contract was made.

By August, 1914, the Commission was developing and distributing 49,000 h.p. From that time onward, owing to the demand for power from industries engaged in the manufacture of munitions and other war material, there was a steady and marked increase in the development of power, the total reaching 151,000 h.p. by November, 1918.

Twelve Distinct Systems

To-day, the Hydro-Electric Commission has twelve distinct systems developing power at various points in the province, from the Niagara river on the south to Thunder Bay on the north and from the Ottawa river in the east to the Detroit river in the west, while the total amount of power being distributed is 292,290 h.p., serving a population of 1,419,220 out of a total of 2,550,453.

The number of municipalities being served at the end of 1919 were 181, of which 121 were within the territory of the Niagara system. Earnings, as per the consolidated operating account, were nearly \$8,000,000, and the surplus, less depreciation charges, nearly \$500,000. With the completion of the Chippawa-Queenston system, the Commission will have invested in its various enterprises a total of about \$100,000,000.

The present capacity of the twelve systems being operated by the Hydro-Electric Power Commission is 400,000 h.p., with an ultimate of 1,950,000, or almost double the amount of hydro-electric energy now under development in the province by public and private enterprises.

Power for Domestic Purposes

Hydro-electric energy for domestic heating purposes is only used in a supplementary way, and for two particular reasons, the first being inadequacy of supply, owing to the demand for power and lighting purposes, and the second, that coal as a source of heat will always be cheaper.

When the fact is taken into account that even if all the electric energy now being developed in the Dominion could be utilized for heating purposes in the Province of Ontario alone it would only provide the fuel equivalent for one half of its population, it naturally follows that before the homes of the provinces can reach the same measure of independence in respect to foreign coal importation as is now enjoyed by its factories in respect to their power requirements, it must turn its attention to the development of Canadian coal resources in other provinces of the Dominion.

Canadian Silver Fox Industry

The first silver-black fox exhibition to be held in Canada was successfully conducted in Montreal during November, under the auspices of the Dominion Government Commission of Conservation. More than five hundred entries represented every section of Canada and many parts of the United States. Thousands of visitors, who daily viewed the valuable animals, included connoisseurs from many lands, among them a professor of entomology from the Imperial University of Sappora, Japan, in which country the fox breeding industry is arriving at an important status, having been built up upon imported Canadian stock.

With but two exceptions, the prize winners, in every grade, came from the ranches of Prince Edward Island, that home of the fox-breeding industry which in every exhibition and sale continues to maintain its place as first in the domestic fur world. During the course of the exhibition a sale of two animals, donated by Prince Edward Island breeders, secured \$1,400 for the McGill University Centenary campaign, then in progress.

Many bids were made for prize animals but owners would not sell.

The value of the animals on exhibit was conservatively placed at half a million dollars.

The Fur Breeders' Association Formed

While the exhibition was in progress, the "Fur Breeders' Association of Canada" was formed, which will take charge of further exhibitions, to be held annually, and their scope extended to include mink, beaver, and other fur-bearing animals raised in captivity. The fine results of the recently concluded exhibition justify the formation of the association and the continuance of the annual event in bringing together fur men for mutual discussion and observation, and stimulating the industry by interesting in it those on the outside.

One of the principal exhibitors from Prince Edward Island, Frederic L. Rogers, has the following authoritative statement to make on the industry in Canada.

Strictly in line with the objects for which the Commission of Conservation was established, viz.: "The Preservation of Natural Resources for Economic Use," may be ranged the Canadian Silver Fox Breeding Industry.

Through the inception and development of the breeding of the silver fox in captivity, there has been saved from practical extinction an animal whose pelt has been aptly described as "the richest fur in the world." Nor have the breeders ceased their efforts at this point; they have gone further—they have, by following well-established principles of breeding science, produced in quantity silver fox fur of purer color, greater beauty, finer texture, and consequently higher value, than any silver fox (except the exceedingly rare specimen) ever found in the wild state.

They have done still more. The moment the problems connected with the domestication of the fox had been solved, the way was paved for continuing the process, where desirable, through the whole range of wild animal life; and already in Canada successes are being won in breeding several of the other valuable fur-bearing animals.

This is real conservation. The world needs furs, and the world's natural supply is becoming depleted at an alarming rate. As population increases and new areas become settled, the denizens of our forests and lonely places are pushed farther back beyond the pale. Once the annual harvest of furs outnumbers the increase, then the exhaustion of that natural resource has begun. And the trend toward exhaustion, while slight at first, becomes increasingly rapid. In the case of the silver fox, breeders have at least begun to offset the natural shrinkage and thus supply good reason for the claim that they are adding to the country's wealth.

Utilization of By-products

And this is not the only sense in which the silver fox industry increases the general wealth and proves itself to be in line with conservation. Substances, fit and useful for animal food, which formerly were simply waste products of our farms and fisheries, have, through the existence of fox farms, become quite valuable. The old and useless, and the injured, cattle and horses and the culls of the fresh fish shippers are cases in point. Abattoir by-products, formerly marketable only when used as constituents in commercial fertilizers, are now shipped a distance of a thousand miles to find a ready and profitable sale in the fox farming districts of Canada. The little second-growth woodlot on the farm has, because

of the demand for ranching sites, become much enhanced in value.

The fur is produced very largely for export—a particularly desirable feature in these post-war days, for reasons that are obvious—but without depleting the breeding herds which are not only kept intact but actually increased from year to year. Canada possesses, in silver fox farming, a comparatively new industry which is extremely profitable to those engaged in it and which brings a large amount of foreign money into the country, while entailing absolutely no depletion of any of our natural resources. This industry had its birth in Canada. Climate and other conditions in nearly all of Canada are favorable for it. From the viewpoint of the conservationist its extension is most desirable.

Across Canada—Toronto

Toronto, which rejoices in the appellation of the "Queen City," is the second in importance and population in Canada, and the capital of the Province of Ontario. It is intrinsically Canadian, reflecting faithfully Canadian conditions and characteristics, portraying truthfully the national life, and being in all respects most loyally British. Ideally situated on Lake Ontario and Toronto Bay, it is in touch with the most important centres of Canada and the United States through many railroads radiating from it. It is a city of clean, spacious streets, of commodious parks and open spaces, and possesses handsome public and private buildings.

Toronto has a population of 562,585 according to the latest computation, and, like Montreal, whilst one of the foremost industrial centres, plays a major part in the artistic and literary life of the Dominion.

1,400 Manufacturing Establishments

According to the latest statistics available, Toronto has 1,400 manufacturing establishments, giving employment to 85,000 people and accounting for an annual production of \$300,000,000 and a payroll of \$60,000,000. Practically all commodities in general use by the Canadian public are manufactured, whilst a considerable export trade has been built up.

Foremost in importance is the clothing industry, followed by the metal trades. Then in order of importance come chemical, printing, book publishing, jewellery, lumber and woodware, with a host of smaller industries. Industrial concerns from the British Isles and the United States are continually swelling the tide and expanding the city's manufacturing activities.

One of the principal livestock markets of the Dominion is situated in Toronto, and the value of the animals received there in the year 1919 amounted to \$68,978,000, whilst the value of trade done in the meat packing industry in the same year amounted to \$99,900,698. It is second only to Montreal in the number of its banks, eight of the Dominion's chartered bank-

ing establishments, with a paid-up capital of \$49,387,468 and a reserve of \$58,800,000, having their head offices there.

Extensive Harbor Developments

The development of the city's harbor with its ten-mile water front at an estimated cost of \$25,000,000, is an important project in the course of being carried out at the present time, and includes harbor improvements, industrial districts, parks and recreation areas.

Toronto is not only the educational centre of the Province of Ontario, but shares, with a few other points the distinction of leading Canadian educational thought, and through the University of Toronto spreads its learning throughout the Dominion.

In addition there is McMaster University and numerous colleges, medical, dental, pharmaceutical, musical and clerical, and a host of technical schools and educational establishments of a high-grade proficiency.

The city is a prominent literary centre with many publishing houses issuing Canadian literature and magazines of a national character, and in all it can boast of nearly thirty public libraries. It is the hub of Canadian musical evolution, possessing many fine musical organizations and choirs.

The Canadian National Exhibition

A permanent exhibition city, each year harbors the Canadian National Exhibition, an event of first national importance, held annually for forty-two years, representing in its exhibits every line of Canadian endeavor, and during the fortnight it is in progress, attracting spectators aggregating over a million.

Tourists make Toronto the gateway to the wonderland of the Muskoka Lakes and the Highlands of Ontario. The picturesque valleys and charming lake scenery to which Toronto gives entry, and the mammoth lake at its very door, open the way to all manner of sports and pastimes and give the city a decidedly out-of-doors aspect at all seasons of the year.

Essentially Canadian, with a romantic history of unwavering loyalty, fostering some of the finest thought of the Dominion, industrially great and in a most favorable location for illimitable expansion, no one can gainsay the claim of Toronto to the title of "Queen City."

Immigration of Women

By Mrs. Robert Kneil, Sec.-Treas. Canadian Council of Immigration of Women, Ottawa, Ont.

Many women in Canada were years ago cognizant of the necessity for co-ordinating the work of various persons and societies engaged in bringing women to Canada for household service. It was not, however, until after the signing of the Armistice, when the question of immigration again confronted the country, that an opportunity presented itself to bring before the Minister of Immigration the opinion of Canadian women on the whole subject of Women's Immigration.

One has only to visualize the newcomers, tired, home-sick, nervous, many unaccustomed to even the ordinary vexations of travel, confronting new customs, strange coinage, new laws, perhaps even an unknown language, usually limited as to means, in order to glimpse how helpful proper organization may be toward setting the immigrant women who are now flocking to our country, in the way of contentment and self-development, and of usefulness to Canada.

Canadian Council of Immigration of Women

After several conferences in 1919, called by the Department of Immigration and attended by representatives of Dominion-wide organizations, and a survey of general conditions throughout Canada, in October of 1919 there was created, with the approval of the Minister of Immigration, a national organization, known as the Canadian Council of Immigration of Women for Household Service.

In past years, grants had been made to local hostels and organizations interested in the welfare of the immigrant houseworkers, and it was believed the Canadian Council of Immigration of Women for Household Service, on account of its representative and national organization, would be able to exercise greater care in co-operation with the Government in offering additional safeguards to handle a situation which had become more difficult owing to post-war conditions. This new organization had for its primary objects:—

Undertaking the supervision of existing hostels for the reception and care of immigrant women for household service.

Arranging for the establishment, control and supervision of new hostels as need arises.

The control and administration of such Federal or other financial aid as may be granted.

Studying the question of immigration of women for household service, and making to the Department of Immigration and Colonization from time to time such recommendations as may be deemed advisable in the general interests of Canada and of the immigrant.

The personnel of this council consists of representatives of fourteen nationally organized societies, appointed by their societies, and representatives of eight provinces appointed by provincial governments. The societies represented include, besides church and philanthropic, The Great War Veterans, Trades and Labor Congress of Canada, and The Social Service Council of Canada; these are represented on the council by men.

With the co-operation of provincial governments and local committees of women, hostels, known as "Canadian Women's Hostels," have been established in Vancouver, Calgary, Regina, Winnipeg, Toronto, Montreal, St. John and Halifax.

Twenty-four hours' free accommodation is given to women coming for household service in the hostel in the province to which they are bound, but any newcomer travelling alone may, for a nominal sum, avail herself of the hostel privileges. Working through the Federal and Provincial Government Employment Bureaux, the superintendents of hostels endeavor to place the incoming women in homes, and at work for which they are best adapted and where they will have opportunity to develop along lines of useful endeavor.

Over 5,000 Women Placed

From December 1st, 1919, to September 30th, 1920, the Canadian Women's Hostels have received four thousand four hundred and seventy-five, not all of whom came for household employment, but through the Government Employment Bureaux. One thousand and eighty-nine were placed in homes and institutions where they have, in the main, given satisfaction. These figures do not include all who came to Canada for employment, but include a large percentage of ex-service women whose passages were prepaid by the English Government.

The women officers on the overseas immigration staff and on this side are part of the Federal immigration machinery and work directly under that Department in their care for, and safe conduct of, the women immigrants.

The work of the Canadian Council of Immigration of Women begins with the arrival of immigrants at the hostel, and aims to make the Canadian Women's Hostel home-centres for the incoming woman, not only until she finds employment, but at all times a place of rest between change of position, when out of work, home-sick, or in need of advice or recreation.

Much Fine Work Accomplished

The reports from these hostels, submitted at the annual meeting of the council, October 5th, demonstrated that a great deal of fine work has already been accomplished, and the programme for ensuing year gives promise of even better opportunities (aside from recreation for these new citizens) to improve themselves in various ways.

The hostels in Calgary and Toronto expect to offer this winter, courses in housework to girls willing to avail themselves of this chance of fitting themselves for the positions which pay a large wage but demand experienced house-workers.

At the January, 1920, meeting, the question of standardization of housework received considerable attention, and it was the consensus of opinion that woman's interests throughout Canada must be aroused to help place housework on a higher and more business-like basis. Accordingly, a committee was appointed, with Lady Pope, of Ottawa, chairman, to collect authoritative opinions on this subject, and gather information regarding the attitude of the country as a whole toward household workers.

This committee brought in a report to the annual meeting, with suggestions to be sent to affiliated organizations, whose co-operation was sought with a view of preparing a scheme wherein the occupation of the household worker would be standardized as to hours, work, and efficiency, and in which the interests of both employer and employee would be considered.

Unrest in Many Parts

It was of interest to learn from this report that unrest existed in all countries among household workers as largely as among other workers, even Japan feeling a reaction from pre-war conditions. Persia was found contemplating opening schools to educate houseworkers, and so from country to country research found a chaotic condition in the realm of the household. Sweden, Switzerland and New Zealand lead in the effort to solve the problem of how to make housework once again one of the most desirable of occupations for women.

An important part of the work of the Canadian Council of Immigration of Women is what is termed "follow-up work." This is not meant in any way to interfere with the personal liberty and independence of the newcomers. Its objects are to safeguard, in every way, the best interests of the women, to provide them with a channel through which they may seek redress for grievances and apply for help, at all times, in any difficulty. The follow-up work is carried on through the various organizations which are linked up with the Canadian Council of Immigration of Women, through the Hostel Superintendents and Hostel Committees, Travelers' Aids, etc.

This question of immigration is a particularly interesting and important one, because in it we are dealing not with commercial commodities, but human values. Those who carry on any part of this work in a country like Canada are dealing with the very vitals of a nation.

The Canadian Council of Immigration of Women is, therefore, a truly national body, whose best efforts are needed at this time to help incoming women to find, and successfully fill, places in the up-building of our country, which holds out to them unprecedented advantages in return for what they bring.

Housing in Canada

In common with many other countries, Canada at the termination of the Great War faced a serious house shortage. Whilst the war was in progress, building was at a minimum—practically at a complete standstill. Labor was scarce, building material high, and where both were procurable the expense at completion did not justify the proceeding with much construction work in the way of residences.

Meanwhile, the normal increase in the population went on and emigration from the United States maintained its more or less even trend. At the conclusion of hostilities, a huge army returned to the Dominion's shores, many of whom had been overseas four or five years, bringing back with them wives and children. To cap this there commenced a heavy flow of emigration from Europe, whilst settlers poured in from the United States at an unabated rate. The situation all over the country was serious, and still remains acute. This may be better understood from the statement of the Winnipeg city housing commission, who has estimated that for a city the size of Winnipeg, two thousand new houses must be built per year to take care of the normal increase in the city's population.

Government Inaugurates Co-operative Assistance

To aid in coping with this state of affairs, to assist in the immediate necessity of erecting homes, and partly offset the high cost of construction by enabling tenants to borrow money to purchase homes, the Federal government established a housing scheme appropriating the sum of \$25,000,000 for the purpose. This was taken in varying sums by nearly all the provinces and supplemented by provincial appropriations. In Ontario, for instance, the total sum appropriated through both Federal and provincial channels amounted to nearly eleven million dollars.

The scheme provides for a maximum loan to the individual of \$5,100. To soldiers and widows of soldiers killed in action, loans may be made to cover the entire cost of both land and home, if the land is obtained through the local housing commission. In other cases, the borrower must either own the land or advance ten per cent of the total cost to the commission.

Three Thousand Buildings Erected

Three thousand new buildings were completed under the scheme, during the past year, and on the whole the scheme is said to have worked out satisfactorily in most places. Montreal, however, claims it has been a failure in that city, owing to the framing of the law by the Government and the multifarious stipulations tagged on by the Provincial Legislature, the chairman of the Administrative Council

declaring that "the housing law is dead as far as Montreal is concerned."

Building will continue in different sections during the winter months, which will further increase the total. It has been stated that more houses have been completed and occupied under the Canadian scheme than under that in operation in Great Britain.

In New Brunswick, about fifty houses have been built under the Federal scheme; in Ontario, 1,400 dwellings completed; in Quebec, both model garden suburbs and houses have been constructed; in the western provinces, hundreds of homes have been erected mainly for returned soldiers. During the early part of the year, the scheme was not taken advantage of as readily as had been anticipated, there being some lack of understanding of its working. There were also difficulties in the way of shortage of material and labor. Greater activity is promised for this year and progress will be still more rapid.

Local corporations with a realization of the severity of the housing situation, have co-operated admirably in aiding the speeding up of the erection of dwellings. In Winnipeg, for instance, under the housing scheme, the commission makes loans of 85 per cent. of the net cost of the home and takes a first mortgage on the property for twenty years, repayable monthly at the rate of \$7.13 for each \$1,000 borrowed. The builder under the scheme selects his lot in any part of the city and may at any time pay off a portion or the whole of the borrowed money without interest. During the summer, the city let contracts for 300 houses for returned soldiers, the tender let for fifty of the residences representing an investment of \$185,000. In all, Winnipeg has been loaned \$700,000 by the Provincial Government to finance the city housing scheme. This fall Toronto proceeds with the civic erection of 500 houses, and a Regina company 50.

Rent Based on Number of Children

In St. Catharines, Ontario, the city council guaranteed 80 per cent. of the bonds of a company formed to erect twenty dwelling houses, to cost from \$3,000 to \$4,000 each, \$500 of which will be paid down by the purchasers. In Windsor, in the same province, the city council purchased one hundred lots on which to build houses to solve the congestion. The city of St. Johns, Quebec, borrowed from the government the sum of \$150,000 to assist in financing a civic housing scheme, and building operations were extensive during the summer. Fredericton, the New Brunswick capital, obtained the loan of \$200,000 from the provincial government's Better Housing Fund to construct dwellings for workmen, and in the past season has done much to relieve the congestion there.

A novel housing project was formulated by a city councillor of Woodstock, Ontario, who erected twenty-five houses and grades the rental according to the number of children in the incoming families. The larger the offspring the lower the rent.

Homes for Industrial Workers

There has been much activity during the past building season on the part of Canada's largest industrial and manufacturing concerns who, in addition to furthering industrial construction, have established colonies and erected dwellings for employees. The success schemes of this kind have met with has brought greater attention on the part of executives to the benefits to be derived from housing employees economically, comfortably, and near their work.

During the summer, the Laurentide Paper Company purchased a farm of fifty acres at Grand'mere upon which to build houses for their employees. In British Columbia, the Imperial Oil Company at Ioco is making progress with its townsite scheme for employees. Five hundred houses are being erected with ample garden allowance, the company's workers being given the opportunity of becoming owners on easy payments of long terms.

Other firms are inaugurating similar projects in various parts of the Dominion, co-operating in relieving the existing congestion and endeavoring to get the housing situation back to its normal pre-war condition.

Soldiers' Insurance Popular

Canada's generous treatment of her returned soldiers, which included a bonus on discharge, a system of vocational training, and a universally approved land settlement policy, has been followed up by a scheme of government life insurance which has so many benefits for the ex-warrior that it was instantaneously popular and within a short time of inauguration had been extensively taken up by military men all over the Dominion. Within three months of the Act having become effective, or up to December 1st, 1920, insurance to the amount of \$3,282,000 was issued by the Dominion government, and \$26,711 received in premiums, representing applications from 1,015 Canadian ex-soldiers. Shoals of inquiries continue to pour in.

The Act applies to all ex-soldiers and nurses and to widows of returned soldiers who died in Canada after discharge from the service. Policies are issued for a minimum of \$500 and a maximum of \$5,000, insurance being payable only in the event of death or the total and permanent disability of the insured. One-fifth of the maximum may be paid at death and the balance, as an annuity, over a period of 5, 10, 15 or 20 years.

Premiums and Qualifications

Premiums are payable monthly, quarterly, half-yearly or yearly. An additional advantage of the scheme is that grace of one month is allowed for the payment of any premium, other than the first, without interest, and should claim occur during the days of grace, it is paid minus the amount of the premium.

The scheme, as evolved, was mainly intended for disabled or partially disabled men whom existing companies would only take at very high premiums or not at all. The government scheme places all men on an equality, and no medical examination is necessary in order to take out a policy which is merely based on the age of the insured at the time of insuring. A great number of fit men are, however, taking advantage of the favorable terms and rates, and the advantages it offers in the payment of premiums.

The majority of the policies issued so far have been for \$5,000, the maximum amount to be obtained under the Act by the individual. Ex-soldiers in every walk of civil life have already insured under the scheme, many being, it is stated, insurance agents, including several chief officials of existing insurance companies. Large numbers of physicians have also taken out policies.

The period during which applications for insurance will be received is open until September 1st, 1922.

The Labor Situation

The monthly report of the Department of Labor, covering investigations throughout the Dominion, shows a further decline in the cost of the weekly family budget, a decrease in the demand for employment throughout Canada, and a comparatively lower loss of time from industrial disturbances.

The decrease in the demand of employment was exhibited over all parts of Canada, being, however, less marked in the prairie provinces. In the food and drink manufacturing line, activity continued; fairly steady in abattoirs and packing plants, but declines in sugar, starch and canning industries reduced the general percentage of employment throughout the group. Textile and clothing continued to register marked decreases and the boot and shoe industries continued to drop. Pulp and paper was still affected in certain areas by the shortage of power due to low water and by the closing of some mills for the season, especially in Quebec.

Periodical Seasonal Slackness

Woodwork, clay, glass and stone groups shared the depression resulting from the beginning of the period of seasonal inactivity in building and construction. Railway transporta-

tion showed an increase which was pronounced in the Maritime provinces due to the opening of navigation in the winter ports. The closing of summer ports on the St. Lawrence affected the usual seasonal shifting of employment among water transport workers; in British Columbia this industry made steady gains.

Mining showed increased activity in all coal fields, but declines were recorded in lead, tin, zinc, and copper in Quebec, and in smelting and refining industries in Ontario. Lumber mills continued on a period of seasonal slackness; logging operations continued to extend in Ontario, Quebec, and the Maritime provinces, whilst a sharp drop occurred in British Columbia.

There were in existence during the month some twenty strikes, involving about 1,959 work people, and resulting in a time loss of 23,442 working days. This was less than in the previous month or in November of 1919.

Weekly Family Budget

Decreases appeared in both wholesale prices index number and the weekly family budget for food. In retail prices the average cost of a list of staple foods in 60 cities was \$15.32 in the middle of November as compared with \$15.83 at the middle of October, \$14.23 for November, 1919, and \$7.96 in November, 1914.

In wholesale prices the chief decreases were in grains, animals and meats, miscellaneous foods, textiles, coke, paints, oil and glass, chemicals, and raw furs, whilst there were slight increases in dairy products and fresh vegetables.

Canada's Sulphur Ore Pyrite Resources

By F. C. C. Lynch, Supt. Natural Resources Intelligence Branch, Dept. of the Interior, Ottawa.

Until recent years insufficient development of her own resources of iron pyrites, especially in the Province of Ontario, had always made the Dominion of Canada largely dependent, even in the manufacture of sulphuric acid, upon supplies of elemental sulphur from such sources as the volcanic deposits of Sicily, the mines of the Union Sulphur Company in the State of Louisiana or those of the Freeport Sulphur Company in Texas.

The stimulus that was given to the mining of these sulphur ores in Canada was an outcome of the war. Italy's entrance into hostilities and the destruction of ocean vessels by submarines cut off trans-Atlantic exports, and when the United States joined the Allies, the production at that time in the North American continent was insufficient to meet the ammunition requirements of all the factories there. Consequently, greater attention was turned to the Canadian sources of sulphur, and as a result the production of pyrites in the Province of Ontario alone increased from 71,620 tons in 1913 to 286,049

tons in 1917. In 1918 the Ontario output, though slightly less than in 1917, realized a value of \$1,144,737, the greatest that has ever been attained. Unfortunately in 1919, shipments fell to 109,080 tons, valued at \$267,211.

Deposits in Quebec, Ontario and British Columbia

The iron pyrites deposits of Ontario, which are the most extensive of the Dominion, are very conveniently situated for water transportation and have a sulphur content varying from approximately 32 to 45 per cent. The most important mines producing for export are situated northwest of Port Arthur and in the Michipicoten district. The principal operator is the Nichols Chemical Company, Limited, the Canadian subsidiary of the General Chemical Company of the United States. The Algoma Steel Corporation, Limited, and the Rand Consolidated Syndicate operate the Helen and Goudreau mines respectively.

In the Province of Quebec, there are pyritous copper ores in which the sulphur content is notably large. These are mined mainly at the Eustis and Weedon mines of the Eastern Townships and are used for the manufacture of sulphuric acid, the residue left after roasting being treated for the extraction of copper. Though these ores were essentially war minerals and a decrease was to be expected in the output after the signing of the armistice, shipments from Quebec in 1919 actually fell much below pre-war production. This state of affairs was largely due to the efforts of the United States producers of crude sulphur to market cheaply the stocks they had on hand, and it was further aggravated by the operation of the Texas Gulf Sulphur Company, a new company that began to produce in April, 1919, at the rate of 1,000 tons a day, and which has considerably increased its daily output since then.

The only other province supplying any pyrite is British Columbia, where shipments are made from the Sullivan mine at Kimberley to the sulphuric acid plant of the Consolidated Mining and Smelting Company at Trail, and from Anyox to the acid plant of the Nichols Chemical Company at Barnett.

In 1918, the total output of pyrites as sulphur ore from Canadian mines was 411,616 tons, which included 124,871 tons from Quebec, 268,507 from Ontario, and 18,238 from British Columbia. The shipments from these provinces fell in 1919 to 52,746, 109,080 and 7,730 tons respectively.

Uses of Iron Pyrites

One of the most important uses of iron pyrites is in the production of sulphur dioxide for the manufacture of sulphurous and sulphuric acids, compounds of fundamental importance in many chemical industries. These acids are required to a large extent in the pulp and paper industry of Canada, and it would seem that

in those localities, especially in northern Ontario, where both the mining of pyrite and the manufacture of pulp are carried on, it would be to Canada's economic advantage to dispense with imports of sulphur for their manufacture. Notwithstanding this fact, 97,062 tons of crude sulphur in 1918 and 56,062 in 1919 were imported mainly from the States of Louisiana and Texas bordering on the Mexican Gulf.

At the present time, in spite of the increased development during recent years of the pyrite deposits of Ontario, only 75 per cent. of the ore used in the manufacture of sulphuric acid in Canada comes from Canadian mines. As a matter of fact, imports of sulphuric acid from the United States have actually increased from 2,197 tons for the fiscal year ending March 31, 1913, to 6,093 tons for the corresponding period in 1919. This, of course, is largely a result of the increased number of chemical industries and pulp and paper companies.

Among the important sulphuric acid producers in Canada are the Nichols Chemical Company, which has plants at Capelton, Sulphide and Barnet in the Provinces of Quebec, Ontario and British Columbia respectively; the Grasselli Chemical Company; the Consolidated Mining and Smelting Company; the Algoma Steel Corporation Limited; the Chemical Products Company at Trenton, Ontario, and the Aetna Chemical Company at Drummondville, Quebec.

The by-product resulting from the roasting of iron pyrites in the manufacture of sulphuric acid is rich in iron, but its too high content of sulphur has proved deleterious to its use as an ore of iron. In the July, 1920, issue of *Technique Moderne*, pp. 301-304, Marcel Guédras gives a description of manufacturing pig iron from pyrite cinders in electric furnaces. The technique of the process depends largely upon the following:—

- (1) Absolute necessity to eliminate the moisture completely in a preliminary roast.
- (2) Utilization of the desulphurizing action of the electric furnace, which action is increased by the pressure of a calculated amount of calcium chloride in the molten bath.

The Sealing Industry

The seal pack in the Northern Pacific waters is considered to be the most valuable herd of wild animals in the world, its value being placed at \$75,000,000 and yearly increasing.

After a conference in 1911 between the United States, Russia, Japan and Canada, all of whom are interested in sealing in these waters, a close season was established for fifteen years and pelagic sealing forbidden. According to the treaty signed at the same time, Canada receives fifteen per cent. of the catch of these waters.

The Dominion's credit has been allowed to accumulate, and when a settlement is made, which will probably be done at the end of the present year, it is expected that Canada will receive something like \$800,000 as her share of the catch since the opening of the season. With the beneficial effect the protection of the herd has had and is still experiencing, it is predicted that in a few years Canada's revenue from this source will be in the neighborhood of \$1,000,000 per year.

The Hair Seal

All the year round, hair seals, which are great roamers, have been in the habit of infesting the Fraser River and the Gulf of Georgia, inhabiting inaccessible flats, and by consuming large quantities of fish already taken in nets, have constituted themselves a general nuisance. Various methods of combating this pest have been tried unsuccessfully, and experimentation is continuing, in the belief that a successful method of trapping will not only terminate the mischief these animals are doing but result in the creation of a new and important industry on the Pacific coast.

The hair seal is valued partly for its hide, which is used in making various kinds of leather, for oil which is extracted from the carcass, and, on the Pacific coast, for use in the manufacture of fertilizer. The hair seal is a particularly valuable animal at the present time, his hide selling for as high as \$175. A recent development in the seal industry is the utilization of the skins of old males, a hitherto unprofitable section, which considerably enhances the value of the seal catch to any country. Canada draws revenue from seal fishery on both the Atlantic and Pacific coasts, and the amounts accruing from these is, at the present time, naturally of gratifying proportions and will be more so in the future.

It has been computed roughly that one million seal skins are marketed every year, and to this aggregate the largest single collection is contributed by the sealers of Newfoundland operating on their own coast and off the shores of Labrador. In the year 1919, Newfoundland's share of the seal fishery accounted for 81,293 seals with a market value of \$278,000. The industry on the island accounts for the employment of 1,685 men, and numerous vessels take part in the often hazardous undertaking.

Newfoundland, the Pioneer

The seal industry originated in Newfoundland in 1763, and for some years after that the annual catch did not exceed three or four thousand skins per season. With the increasing demand for oil and skins, however, the industry grew, and more men and vessels came to engage exclusively in it. By the beginning of the nineteenth century, the annual catch exceeded 60,000 skins, and larger and larger vessels were

built for the pursuit, till later these were superseded by fast steamers. At the present time, though there are some sailing vessels still engaged, the steamer is the big unit in the activity and accounts for five-sixths of the catch.

Of late years the seal catch of Newfoundland has fallen off somewhat, due to the heavy toll and indiscriminate killing, which is now regularized by legislation. The 1908 catch, for instance, numbered 213,863 seals, and that of the following year 269,320 animals. A single vessel has been known to bring in to St. John's a catch of 42,000, and a total of nearly 700,000 seals have been taken by the entire Newfoundland fleet in a single season.

A Novel Trapping Method

A novel method of hunting seals, under the auspices of the government of Newfoundland, is to be introduced in the spring by two Nova Scotia aviators, which, if successful, may revolutionize the entire industry. The party of three men, with two aeroplanes and dirigibles of the type used so successfully during the war to "spot" submarines, will sail from Montreal early in January to join the Newfoundland sealers at St. John's, the augmented party of thirty-five or forty leaving for the Labrador ice-fields.

Hitherto the locating of seal herds has been done by men in the rigging of ships whose range of vision is naturally limited. This work it is intended to do with planes, "spotting" being possible by this means within a radius of fifty miles. The method then is as follows. The aeroplane, which carries five men besides the pilot and mechanic, descends to the ice where the animals are despatched by bullets from machine guns. The skins are then packed in bundles about the base of poles to which a flag is attached. This kind of hunting continues to the end of the season when the ice breaks up, the hunters proceeding from place to place, transported by plane as new herds are "spotted." At the close of the season the vessels visit the ice-breaks and pick up the bundles, being materially assisted by the planes in locating and signalling.

Close upon the announcement of the projected activities of these aviators, there arrived in St. John's two "blimps," or war airships, a present to Newfoundland from the Imperial government. These it is intended to use in the seal fisheries in the same manner, the cost of operation, estimated at \$60,000, being borne jointly by the Newfoundland government and the owners of the sealing vessels assisted in their catch.

The co-operation of the government in this new venture would augur a belief in the practicability and success of the novel enterprise, and doubtless their success, which is highly probable, will have a marked effect upon sealing on both coasts and tend to bring about a revolution in hunting methods.

The Department of Colonization and Development

The Department of Colonization and Development has the following offices established in the United States, Great Britain and Europe, whose representatives, at any time, will be glad to furnish information regarding Canadian agricultural, industrial and commercial enterprises.

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J. S. DENNIS, CHIEF COMMISSIONER,
Department of Colonization and Development,
Canadian Pacific Railway Company.

Ask the Canadian Pacific about Canada



Agricultural and Industrial Progress in Canada

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Canada's 1920 Trade

THE figures of Canada's total trade for 1920 make the most notable showing in Canadian commercial history, constituting a record in the amount of business transacted. Total trade was \$2,639,716,000, or \$40,000,000 over the total for 1917, which was previously the record year, and more than \$400,000,000 in excess of the 1919 figures. Imports for the year were \$1,336,911,000, and the total exports, \$1,302,805,000.

The increase in the value of exports, maintained in spite of a marked decline in prices, is a striking tribute to the soundness of Canada's export trade. The total trade between Canada and the United States amounted to \$1,507,651,094 as compared with \$1,231,656,516 in 1919, an increase of twenty-two per cent in the year. Imports amounted to \$921,625,825, and exports to \$586,025,269. Canada's total trade with the United Kingdom fell away to the extent of \$53,000,000 during the year, amounting to \$574,689,000 as compared with \$626,633,000 for 1919. This was due to the decline in exports consequent upon the rate of exchange militating severely against the purchase of Canadian products.

Canada's total export trade registered an advance of \$8,000,000 over that for 1919, which is a remarkable showing when it is considered that only a small portion of it was done through the assistance of government credits or even of private long term credits of any considerable

magnitude. A survey of the trade figures of the last month of the year shows that there was an increase of about \$43,000,000 in exports of food products, mainly grain. Exports of wood and wood products, which included pulp and paper, totalled approximately \$23,400,000, or nearly \$5,000,000 over the value for December, 1919.

The growing nature of Canada's export trade is evident from the fact that while in 1913-14 eighty-seven per cent of it was done with the United States and the United Kingdom, in 1920 only 73 per cent of it was done with these countries, and this despite adverse exchange conditions which reduced exports to European states. On the other hand, whereas in 1913-14, 14.8 per cent of the imports came from countries other than the United States and United Kingdom, in 1920, only 13.7 percent did so.

CANADA'S TRADE FOR THREE YEARS

	Total Trade.	Imports.	Total Exports
1920..	\$2,639,716,000	\$1,336,911,000	\$1,302,805,000
1919..	2,235,844,000	941,013,000	1,294,830,000
1918..	2,153,898,000	910,171,000	1,243,727,000

A digest of the year's trade figures, noting especially those of the last months of the year, gives a gratifying impression from a national standpoint. There is indication of a tendency towards an equalization of imports and exports with the United States, the inequality of which, since the war, has brought about the existing exchange situation and revolutionized affairs between the two countries. In view, however, of general conditions prevailing since the termination of hostilities, the Dominion has reason to be satisfied with its record business year.

Agricultural & Industrial Progress in Canada

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It will be appreciated by the Department if editors and writers using matter from this Bulletin will quote source.

Norman S. Rankin, *Editor*.

General Agricultural Situation

*Compiled by J. Dougall, General Agricultural Agent,
C.P.R., Montreal.*

The total yield of wheat for Canada for 1920 has now been fixed at 263,189,300 bushels from 18,232,374 acres, as against 193,360,000 bushels from 19,125,968 acres in 1919 and 254,480,440 bushels from 16,342,969 acres, the average for five years from 1915 to 1919, inclusive. The yield from the Province of Saskatchewan was disappointing as the Province only yielded 11.2 bushels of wheat per acre as against 13.75 estimated. The average yield for Canada (wheat) is now given as 14.5 as against 10 bushels for 1919 and 15.5 for the 5 years' average.

The yield from oats is placed at 530,709,700 bushels from 15,489,928 acres, compared with 394,387,300 from 14,952,114 acres, 1919. The average yield is 33.5 bushels compared with 26.25 in 1919 and 32 bushels for the 5 years' average.

Barley yield 63,310,550 from 2,551,919 acres as compared with 56,389,400 from 2,645,509 acres in 1919; average yield per acre 24.75 for 1920, 20.25 for 1919, and 24.5 for the 5 years' average.

The potato yield of 133,831,400 bushels from 784,544 acres compared with 125,574,900 bushels from 818,767 acres in 1919 and 86,692,620 bushels from 633,937 acres, average 5 years. The yield is the highest on record.

The importance of the Western Provinces as grain producers, and notably wheat, will be noted when we see that out of a total wheat crop of 263,189,300 bushels in 1920, 234,138,000 were raised west of the Great Lakes and in the three great provinces, Manitoba, Saskatchewan and Alberta; and it must be remembered that all this is made up of various varieties of hard wheat. The quality of the oat crop is such that a strong demand for seed is apparent from the United States.

The World's Wheat Production in 1920

It is estimated that the world's wheat crop for 1920 will show 2,074,769,000 bushels compared with 2,073,555,000 bushels for 1919. North America produced 1,044,909,000 compared with 1,134,247,000 bushels in 1919 and 1,070,330,000 the 5 years' average. It will be seen that North America stands out prominently as a producer of wheat. It is also noticeable

that although North America shows a decrease for 1920, yet Canada had a noticeable increase—263,189,000 for 1920 as against 193,189,000 for 1919—and as stated above, Canada's exports of wheat are hard wheat.

Below are the official figures for 1920 indicated by those nations reporting to the International Institute of Agriculture, corrected to show Canada's final estimate:

Europe:	1920	1919
	(Last 000's omitted)	
Countries	Bushels	Bushels
France.....	230,416	182,446
Italy.....	146,975	169,771
Spain.....	134,457	129,251
England, Wales.....	61,600	63,808
Bulgaria.....	41,190	34,029
Sweden.....	10,688	9,509
Belgium.....	9,050	9,895
Switzerland.....	3,586	3,524
Finland.....	276	306
Total.....	638,138	602,539
Asia and Africa:		
India.....	376,880	280,485
Egypt.....	27,246	30,137
Algeria.....	13,902	19,166
Tunis.....	4,766	6,981
Total.....	422,794	336,769
North America:		
United States.....	750,648	940,987
Canada.....	263,189	193,260
Total.....	1,013,837	1,134,247
Grand Total.....	2,074,769	2,073,555

The value of the Canadian field crop, as estimated by the Dominion Bureau of Statistics for the year 1920, shows a total of \$1,455,244,350, a new high record, and \$3,000,000 over the 1919 figures, notable when we consider that wheat has fallen 80c per bushel since 1919.

Fortunes in Cattle

The rapid rise from obscurity to wealth, which so often follows in the wake of earnest agricultural effort on the western prairies, would read like fictional romances in any other country but the Canadian West, where the natural productivity of the land and luxuriance of herbage, coupled with assiduity and intelligent practice, have produced so many wealthy agriculturists. So, if one instance is taken for illustration here, it is not because it is exceptional, but rather because it is typical of a large class.

Frank Collicut has one of the most successful ranches in Southern Alberta, a region of fine and spacious ranches, and possesses what has been termed possibly the most exceptional herd

of Hereford cattle on the American continent. His ranch near Crossfield, Alberta, consists of 7,000 acres of land, which support nearly 700 head of pure bred "White Faces." The intrinsic value of the herd may be roughly calculated when the owner finds it a profitable move to purchase bulls at \$20,000 each.

The Rise of the Hired Man

Yet time was, and not so very long ago, when the owner of this mammoth concern was the "hired man" of a small rancher, herding cattle and doing the many odd jobs of a hireling about a ranch. His cattle experience and the knowledge he acquired, however, stood him in good stead, and he left to become a buyer for one of the largest packing companies in Southern Alberta.

Further insight into the cattle business only served to prove to him the money to be made by the producer and he decided to throw up work as an agent to enter the industry at its source. At that time he was in such a low financial state that he had to borrow money to make his first payment of 30 cents per acre on 640 acres of land. He already dreamed of success, however, and, with a view to later development, located at the bottom of a wide and well-sheltered coulee, calling it "Willow Springs," the nucleus of what was to become one of the largest pure bred ranches on the continent.

Development through intelligent effort was steady and rapid.

A commencement was made with a few grade animals, but after following the industry for a few years, he decided to make a change to a smaller herd of pure bred stock on the argument that a pedigreed animal cost no more to rear and yielded greater returns. Accordingly, in 1908, a herd of Hereford cattle, which came originally from the native county of the breed in England, was acquired, and formed the foundation of the white-faced herd which now ranges over the huge Willow Springs holdings.

A Prosperous Venture

The prosperity in this venture can be seen from the fact that, in 1916, Mr. Collicut was able to purchase a \$11,900 bull from across the line, and, two years later, one for \$20,000. That these investments were justified is evidenced by the statements of prominent animal husbandmen that the progeny constitutes the equal, if not the superior, of any similar herd on the American continent. The young animals have gone to every part of North America, many bringing \$5,000 each, and one being later resold for \$20,000.

This is the record of fifteen years' work backed up by faith and intelligence—not exceptional, but rather typical of the rise to fortune of a host of Western agriculturists.

To-day, the Willow Springs with the pure

bred herd it nourishes is almost impossible of valuation, and its product is known for its high excellency all over America. Its owner started out with nothing but an unwavering faith in the possibilities of the Canadian West.

Success of Soldier Settlers

Practically every country implicated in the maelstrom of the Great War, and experiencing the same problems in the aftermath, has paid warm tribute to the generous manner in which Canada treated her returned warriors and the effective measures she devised for their successful re-establishment in civil life. In common with other belligerent nations, Canada was faced with the problem of rehabilitating a huge army alienated, after years of hardship and contention with primitive conditions, from their pre-war existences, and facing an uncertain future with vastly differing ideals and an entirely changed outlook upon life.

It was a wise procedure, both for the nation and the individual soldier, to encourage the army to go on the land, and to assist soldier settlers in such a manner as to become producers almost immediately instead of undergoing the hardships and years of slim revenue, which often are the lot of the pioneer. That the years of war had turned the minds of many towards the land is indicated by the response to questionnaires distributed to soldiers shortly after the armistice, when 487,771 men advised their desire to take up farming as their life work, whereas there were only 172,218 of these who, previous to their enlistment, had been so employed. Only 4,175 men in the Canadian army, who had previously been farmers, wished to leave their calling to follow others. The subsidized, assisted project of the Soldier Settlement Board has proved immensely popular, as witness the fact that in the two years which have elapsed since the armistice up till December 1st, when the last figures were published, approximately 59,000 returned soldiers have made application for the purpose of qualifying, 42,000 have been declared qualified, whilst approximately 20,000 have received advances amounting to more than \$80,000,000.

Soldiers Favor West

Alberta has received by far the largest number of these settlers, followed by Saskatchewan, Manitoba and British Columbia. Of the total, eighty-five per cent. of soldier settlers have located on land west of the Great Lakes, the figures by provinces being: Alberta, 5,710; Saskatchewan, 4,875; Manitoba, 3,289; British Columbia, 2,941; Ontario, 1,403; New Brunswick, 505; Quebec, 459; Nova Scotia, 395; Prince Edward Island, 302.

The loans approved by provinces are: Alberta, \$22,829,021; Saskatchewan, \$19,842,091; Manitoba, \$13,267,826; British Columbia, \$12,587,021; Ontario, \$6,064,042; Quebec, \$1,899,434; New Brunswick, \$1,449,704; Nova Scotia, \$1,287,928; Prince Edward Island, \$814,947.

That Canadian soldiers have co-operated in every way to make their re-establishment by way of the land successful, and entered wholeheartedly into the pursuit of agriculture once they had undertaken it, is manifested in their overwhelming success as reported by inspectors of the Soldier Settlement Board. These experienced agriculturists, who periodically visit the farms operated by soldiers who have obtained loans from the Board, have stated that ninety-five per cent. are making good and proving successful farmers, and that, furthermore, of the remaining five per cent., the majority are failing not from indolence, poor farming, or lack of personal qualities, but owing to physical hindrance in the recurrence of their war disabilities. The Board reports that since the harvesting of the 1920 crop, repayments on loans are being made very much ahead of the dates specified. Though the payments extend over a period of twenty-five years, and the Board has been in operation a little more than two years, nearly 300 men have, as a result of their successful farming operations, been able to pay off their total indebtedness.

Twenty Thousand on Land

From the national standpoint, and viewing it in the light of its contribution to agricultural production, the success of the Soldier Settlement Board's scheme is of prime importance to Canada. To date, it has resulted in the locating of 20,000 men on the land under the most favorable conditions, both economic and social. These men have, in the form of soldier-grant entries, received 2,000,000 acres, and by purchase or through the exercise of their civilian right, secured another 1,100,000 acres of a total of 3,100,000 acres. It is also to be remembered that, so far, less than one-half of those who have qualified have been placed. Estimating the yield on this land at 14.5 bushels per acre, this year's average over the Dominion, these soldier lands are responsible for an additional 45,000,000 bushels on Canada's wheat crop.

Farming an Increasing Industry

Much has been said and written during the past year about the exodus of population from the farms to the cities and towns both in Canada and the United States, and, from time to time, various suggestions have been put forth to remedy the situation. Vacant farms there are in different parts of the country, and always will be, but it can hardly be said, for that reason, that farming is losing its attractions or is, as a whole, a declining industry.

Certainly this is not the case in Western Canada, where land brought under the plough is steadily increasing, and where the crop output, year by year, is showing appreciable gains. According to the *Canada Year Book*, the area of occupied farm lands in the three prairie provinces has increased 25.04% in the five-year period 1911-1916, or from 58,623,117 acres to 73,300,135 acres, the Province of Alberta showing the greatest increase, but Saskatchewan the greatest area. The same situation is found regarding the number of farms, Alberta leading with 10.53% of increase and Saskatchewan 7.92%, but having over one thousand farms more than the former.

Manitoba, with a much smaller percentage of increase, cannot be fairly compared with her sister provinces, for it was the first western province to be settled, and until 1912, when its area was doubled by the passing of the Boundary Extension Act, her size was but one-half of either Alberta or Saskatchewan. By the revision of the boundaries however, Manitoba received an additional 114,000,000 acres. The greater part of the province is still the property of the Crown and open to homestead, though some, of course, is held by private companies.

It is interesting to note that the size of the greatest number of Western prairie farms is a unit between 101 and 200 acres, with a unit between 201 and 320 acres next following. Students of farming statistics have always claimed that as mixed farming became more popular, the size of the farm unit would decrease, and in view of the foregoing facts, it would seem as if their contentions were justified.

The following tables outline the situation:

Total Area and Area of Land in Farms, 1911 and 1916

Province	Total Land 1916 Acres	Land in Farms		Increase	
		1911 Acres	1916 Acres	Acres	P.C.
Manitoba (1916).....	41,169,098	12,228,233	13,436,670	1,208,437	9.88
Saskatchewan.....	155,784,100	28,642,985	36,800,698	8,157,713	28.48
Alberta.....	161,872,000	17,751,899	23,062,967	5,310,868	29.42
Total.....	358,825,198	58,623,117	73,300,135	14,677,018	25.04

Number of Farms by Provinces, 1911 and 1916

Province	1911 No.	1916 No.	Increase No.	P.C.
Manitoba.....	45,606	46,580	974	2.13
Saskatchewan.....	96,372	104,006	7,634	7.92
Alberta.....	61,496	67,977	6,481	10.53
Total.....	203,474	218,563	15,089	7.41

Distribution of Farms by Size of Holdings, 1916

Size of Holdings	Farms Occupied	Total Area Farms
50 acres and under.....	5,064	82,475
51 to 100 acres.....	3,546	280,120
101 to 200 acres.....	94,388	15,053,668
201 to 320 acres.....	68,908	21,648,231
321 to 480 acres.....	21,836	10,025,784
481 to 640 acres.....	13,348	8,364,899
641 and over.....	11,473	17,844,958
Total.....	218,563	73,300,135

Whether the popularity or unpopularity of farming is on the increase, the financial result of the Canadian farmer last year is a strong argument in favor of the former. According to official figures, field crops reached the huge sum of nearly \$1,500,000,000, exceeding the total of the previous year by \$182,000,000 and that of 1918 by over \$261,000,000.

When one considers the vast available Western farming acreage that, as yet untouched, lies waiting the coming of the tiller of the soil, it is easy to understand how boatloads and trainloads of incoming settlers are swallowed up almost without trace or impression. As this BULLETIN has pointed out from time to time, immigration this year has been strong and steady, and yet so quickly has the process of assimilation been evolved that it is hardly apparent.

In the face of repeated claims that emigration from Canada is as steady and constant as is immigration, even sceptics will admit there is room for doubt in the facts of increase in population and steady annual increase in the area under crop and its market value.

Production of Flax Fibre in Canada

By G. G. Ommanney, M.I.C.E., Investigation Engineer,
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The agricultural year just ended exhibited a gratifying progress in the cultivation and production of flax fibre in Canada. It has been clearly demonstrated, as a result of the year's work, that flax fibre can be successfully grown in Manitoba, while extensive experimentation on the irrigated lands of Southern Alberta have produced the most satisfactory results which will shortly be the subject of a detailed report. It is now possible to estimate fairly accurately the cost of Canadian production as illustrative of the profits to be obtained from the pursuit of the industry, whilst the research into the suitability of Western Canadian land for production has been extremely valuable and entirely satisfactory.

Prior to the war, Russia produced the greater part of the world's supply of fibre flax to the extent of from 300,000 tons to 400,000 tons annually; Belgium and Northern France were also large producers. All the countries except Russia were importers of flax, and the United Kingdom grew only 12,000 tons of the 100,000 tons which is required annually. To-day, the Russian supply is cut off, the Soviet Government having declared, according to report, that fibre flax production except for domestic

consumption is at an end. A large extent of the flax-producing areas of France and Belgium have been devastated by war, and consequently the shortage of raw material has been, and will continue to be acute.

Successful in Both East and West

In Eastern Canada, fibre flax has been grown successfully for some years, and in the past few years there has been a great increase in the acreage, due largely to the efforts of R. J. Hutchinson, Chief of the Flax Fibre Division of the Dominion Government. In 1914, Ontario had 1,400 acres of fibre flax, which was increased to 10,700 acres in 1917, and 30,000 acres in 1920. Fibre manufactured from Ontario grown flax in 1919 was sold in the European market for as high as \$1.20 a pound. An expert from Courtrai, Belgium, the world's most famous flax-growing district, has stated that the Ontario flax plant is of a quality equal to, and even better than, the best Belgian flax, but labor conditions and experience have hampered and been lacking up to date in obtaining the best results in the conversion of this flax into fibre. Nevertheless, a fibre of very excellent quality has been produced and marketed, as stated above, and time and experience will undoubtedly improve the quality of the product.

It has been clearly demonstrated in the past year that fibre flax can be successfully grown in Manitoba, an excellent crop having been produced at Teulon by the Netherlands Canadian Flax Syndicate. The Canadian Pacific Railway Company has carried out extensive experiments during the year in the cultivation of fibre flax on their irrigated land in Alberta. The results have been entirely satisfactory and will shortly be published in detail.

Clean Land and Soft Water

The cultivation of this particular crop in the last two mentioned provinces may be said to be somewhat handicapped by climatic conditions due to the dryness of the atmosphere. Flax naturally demands considerable moisture and an abundance of soft water for its treatment in harvesting. Irrigated land appears from experience in Alberta to entirely fulfil these requirements. The writer is of the opinion, which has been confirmed by government experiments, that the climate of Vancouver is exceptionally favorable to the cultivation of this crop. Fibre flax demands level land, a soil that is free from alkali or peat, that is not too heavy nor yet so light that the shallow plant roots cannot have a secure hold, and that can be cultivated so that it will be free from all irregular lumps. A six or eight-year rotation is desirable, and only good, clean land should be considered.

There is a good supply of seed available from the East this year. It is of the utmost importance that seed should be of unimpeachable fibre-producing origin, and the Canadian Government now places its certificate on all seed, so that nothing should be purchased without this protection. All of the Canadian seed was originally from Europe, coming either from Russia or Holland, and some having been first cultivated in Ireland.

New Machine Solves Labor Problem

The cultivation of fibre flax in Canada has hitherto been retarded by labor difficulties. The crop has had to be pulled by hand, a laborious and very expensive process, for which rates as high as \$25 an acre, piece-work, have been paid in the East. This year the Vessot flax pulling machine has been brought to a state of practical development and has operated successfully both in Ontario and Manitoba. There is not the slightest doubt but that this machine represents the solution of the labor problem in regard to flax. Its capacity is from six to nine acres a day, depending upon the weight of the crop.

At the present moment, the flax market is somewhat depressed. Belgium this year planted every available acre to flax, and about 5,000 tons of Russian flax, released from storage, came on the market. The high price of linen has resulted in a temporary cessation of buying, and spinners are holding back production in an effort to force down the prices asked by the growers. The writer believes that this is a purely temporary condition. Belgium has not the necessary land for rotation to enable her to maintain this year's production, and in Russia the situation is still chaotic. Mills cannot long stay out of the market for their raw material.

Cost of Production and Revenue

In figuring the economics, the capital charge on land should be placed against the crop of, say, 200 acres, allowing the necessary acreage for rotation. To this add the local cost of ploughing, discing, and seeding and allow for seed at two bushels an acre and, say, four dollars per bushel. The flax must be pulled, retted, broken and scutched. In the hand-pulling process, allow \$25 an acre; if by machine, \$10, plus the distributed capital charge on the cost of the machine, which is \$2,500 and a small royalty charge. Retting, turning and spreading is estimated at \$5.00 per acre, and, in addition to this, there is the cost of hauling to the mill. The necessary milling machinery and buildings should not exceed \$20,000. Capital cost, interest on this item, depreciation, and overhead must be added to the cost per acre. Figure two tons of straw per acre and seven cents a pound for the operation of scutching. The total cost of production should not exceed thirty cents per pound of fibre. As revenue this will return per acre, say, 300 pounds in line fibre at \$1.00 to \$0.50; one hundred pounds of tow at \$0.40 to \$0.25; and ten bushels of seed at \$8.00 to \$4.00 (all subject to market fluctuations).

Since the conclusion of this article, the announcement is made that the Dominion Government has secured the services of two flax experts who will visit all Canadian mills for the purpose of establishing grades of Canadian fibre which will be recognized on foreign markets. This is a progressive step for the industry as it means that growers need no longer submit samples in marketing their product and buyers will know that they are purchasing to a certified standard.

The Linen Industry in Canada

The linen industry was initiated in Canada in 1902 by Mr. William Berry, now Vice-President of the Dominion Linens Limited, Guelph, Ontario. Previous to this time, however, there had been several attempts at linen manufacture, and mills established in different parts of Canada, but all had resulted in failure.

From the earliest period of human history till almost the close of the eighteenth century, linen manufacture was one of the most extensive and widely disseminated of the domestic industries of European countries. It was most

largely developed in Russia, Austria, Germany, Holland, Belgium, Northern France, certain parts of England, the North of Ireland and throughout Scotland.

In the latter part of the eighteenth century, the invention of cotton spinning machinery gave the linen weaving industry a fatal blow. Domestic spinning and weaving began to shrink and with it hand loom weaving.

In 1815, at Darlington, England, a machine was invented which, after many improvements and modifications, has become the perfect system of machinery with which, at the present day, linen spinning mills are furnished. The discovery of a process for the mechanical spinning of linen yarn for weaving into cloth by power loom was much slower than in the corresponding case of cotton.

Two Branches of Industry

There are two branches in the modern manufacture, spinning and weaving, to which may be added bleaching and various finishing processes. The flax fibre is received in bundles from the scutch mills, and after having been classed into various grades, according to the quality of the material, is labelled and placed in store ready for the flax mill.

The whole operations in yarn manufacture comprise: (1) hackling; (2) preparing; (3) spinning. Hackling is a preparatory process consisting in combing out and laying smooth and parallel the fibres, and splitting up and separating into their ultimate filaments the strands of fibre which, up to this point, have been agglutinated together.

The various operations of preparing have for their object the proper assortment of material into qualities for spinning, drawing out the fibres to perfectly uniform grades and colors, containing throughout an equal quantity of fibre of given length.

Canadian Industry Successfully Started

When the manufacture of linen in Canada was successfully started, the idea was to purchase yarns from the Continental and Irish spinning mills, which were being supplied with Russian flax, at a price much below that for which flax could be grown in Canada. As most of the linen manufacturers in Ireland were weavers only, buying their yarns from spinners, it was thought quite possible and feasible that the same method could be employed with success in Canada, and, prior to the war, the linen business depended entirely on these imported yarns to keep their plants in operation.

In the year 1913, it is estimated that Russia produced about 400,000 tons of flax, and other European countries, including Great Britain and Ireland, 100,000 tons. The exports of flax from Russia in the year 1913 were over 200,000 tons,

and the price at which this flax sold was so low that it was not possible for it to be produced in Ontario at a price to meet this competition. As the war progressed, the supply of Russian flax became much curtailed, and the demand for linen goods so incessant, that the War Trade Board of Great Britain placed an embargo on the shipment of all linen yarns, shutting off entirely the raw material of the Canadian linen manufacturers.

With the cutting off of the supplies, and the increased demand, the price of flax began to soar, and old flax men in Western Ontario began to see a possibility of again successfully entering into the growing and preparing of flax, which had been a prosperous business at one time.

Ontario Flax Proved Excellent

With the complete collapse of Russia in 1918, it became evident that if the linen business was to be continued in Canada, it would be necessary to establish a spinning plant here, to spin the Canadian grown flax, which, with the improved methods of cultivation, were proven equal to or better than the Russian flax, on which the industry had relied previous to the war.

In 1918-19 there were eight linen manufacturing factories in operation in Canada. These were: the Dominion Linens, Ltd., at Guelph and Tillsonburg, Ont., table linens and towels; Flax Spinners, Ltd., Guelph, Ont., linen yarns; Dundas Linen Mills, Ltd., Iroquois, Ont., huck towels; The Doon Twine, Ltd., Kitchener, Ont., yarns and twine, also located at Doon, Ont.; the Maritime Linen Mills, Ltd., Moncton, N.B., dusters and crashes; and the Federal Flax, Ltd., at Montreal, P.Q.

The Dominion Linens Ltd., Guelph, who are the largest manufacturers in Canada, decided to install a modern flax spinning plant, which would complete the chain of linen manufacturers and make the business a purely Canadian one. A subsidiary company was organized under the name of Flax Spinners Limited with the object of growing, retting, and spinning Canadian flax. This plant has been equipped with the latest modern dry and wet spinning systems. To secure the highest quality of linen yarns, workers were brought from Belgium, who were experienced in water-retting flax, similar to the finest Flemish and Belgian flax which is used for producing the highest grade linens.

Dominion Linens Limited have now got the complete plant in operation, and are turning out fine damasks and all kinds of household linens, from flax grown in the vicinity of Guelph, water-retted under the most approved manner, and the goods turned out claimed to be equal in every respect to those made anywhere in the world. In spite of the fact that the linen industry is passing through a period of depression, they report unfilled orders sufficient to keep their plant

in operation several months, and on account of the quality of output, they expect a record business in the present year. Large orders have recently been placed by leading transportation companies, and retail stores.

Navigation on the Great Lakes

By M. McD. Duff, Mgr., Great Lakes S.S. Service, C.P.R.

The Great Lakes, those wonderful bodies of fresh water, possess a charm which never fails. To those who know them, the charm increases with lengthened acquaintance, and the newcomer's first visit is never the last. Unfortunately, however, even on this continent in the territory east and south of their natural boundaries, they are soon forgotten once the school geography is laid aside.

To the scientist, their physical history is fascinating and they tell us that aeons before the lakes were lakes, their present basins were drained by mighty rivers; those from the upper lakes finding their way by the present south-eastern end of the Georgian Bay, past Lake Simcoe (almost the line of the Trent Valley Canal), crossing the Lake Ontario boundary about twenty miles east of Toronto, then joining with the branch from the Lake Erie basin near Rochester, N.Y., and on down the present St. Lawrence Valley.

Niagara is painfully young. The original river used the Dundas Valley and the present Burlington Bay. About thirty-two thousand years ago, when the lakes began to approach their present outline, there was no connection to Lake Erie from the Upper Lakes, whose waters found their way through Lake Nipissing and the Ottawa Valley over the route of the proposed Georgian Bay Canal; and it was only some twenty-four thousand years later that they broke through to the Erie Basin and Niagara approached her present grandeur. Possibly, in another five or six thousand years, Niagara may have vanished and the surplus water escape by the Chicago drainage canal.

Early History

Champlain first visited the Great Lakes in 1615, using the Ottawa River, Lake Nipissing and French River route. The history of the next two centuries is filled with brilliant records of exploration, education and evangelization by the French, and particularly by the Jesuit Fathers, whose heroism and devotion is appropriately marked by the names they have left: Sault Ste. Marie, Isle Royale, and Duluth, all widely known. The fur trade developed slowly but surely, hampered as it was by never ending warfare between the Indians and French, French and British, British and Americans, until the Treaty of Ghent brought mutual disarmament and American and Briton settled down, in 1815, to a century of peace.

The first vessel to ply the waters of the upper lakes was the "Griffin," built by La Salle in the Upper Niagara River in 1679. Although she was launched in May, it was not until August that they were able to get her over the swift water and on to Lake Erie. She had a very short career, for her first voyage was never completed. She got as far as Lake Michigan, and after loading a cargo of furs, set sail on the return voyage 18th September, but was never heard of again. Her size is not certain, but is variously estimated between 45 and 60 tons burden.

From this little craft to the present ballast freighters which lift 12,000 tons of ore or half a million bushels of wheat, is a long cry, although the development of lake navigation was a very slow process until the close of the war of 1812, and up to which time the limit size was 100 tons. There was, however, great expansion on the conclusion of the war. The tide of commerce gradually flowed westward from Lake Ontario until the first canal at the Soo was opened in 1855, and Lake Superior began to come into its own.

The First Steamer

The first steamer was the "Ontario," launched in Lake Ontario in 1816, to be followed two years later by the "Walk in the Water," which opened steam navigation on Lake Erie; from that time onward, steam rapidly replaced sail-power, until to-day a sailing vessel is a rare sight on the lakes. Up to 1830, there were only eight steamers on the Great Lakes, the largest being the "Superior," which measured 346 tons. Building was very rapid from 1830 on. The "Michigan," launched at Detroit in 1833, was the largest, and had sleeping accommodation for 108 passengers. The steamer "Great Western," commissioned in 1839, was the first vessel to have passenger accommodation on two decks, and during the time she was building, grave doubts were expressed as to her seaworthiness. These early steamers were all wood burners.

As the tide of immigration flowed westward to Illinois and Wisconsin, the demand for passenger accommodation became so great that a daily service was established between Buffalo and Chicago.

These passenger boats were all fairly fast, making the trip from Buffalo to Chicago in from three to four days, counting, of course, time of stoppage at way ports and time lost in fueling. The passenger boats were all side-wheelers and handsomely fitted up, in some cases elaborately decorated.

The year 1850 marked the height of the side-wheel passenger traffic. At that time there were sixteen first-class steamers between Buffalo and Chicago, two boats leaving each port daily, and while passengers offered, they were profitable, four to five hundred passengers per steamer being not unusual. The building of the railroads, however, gradually cut the business away, until by 1860 side-wheeler boats were practically out of business; the passenger business had gone, and they could not compete in freight service with the less expensively operated screw-propelled vessels.

The First Propeller Boat

The first propeller boat was the "Vandalia," 138 tons, built at Oswego in 1841. The first steam propeller vessel on Lake Superior was the "Independence," which was launched in Lake Superior in 1846. At that time there were only four so-called ports on Lake Superior, and the landings were made from anchorage in small boats.

It is interesting to note that the side-wheeler passenger boat is eventually coming back to its own. The very fine passenger steamers operating between Buffalo, Cleveland and Detroit are all of this type.

The first merchant iron vessel was the "Merchant," built at Buffalo in 1861. From that time, iron and steel rapidly replaced wood. In the Eighties, the "Onako," 281 feet long, was considered a marvel, having carried 110,000 bushels of corn, the greatest cargo on record, until in 1897 the "Amazon" took 230,000 bushels.

The size has increased year by year, until to-day we have the "Grant Morden," 604 feet long, which has carried close to 750,000 bushels of oats. The deepening of the harbors and river channels, the increasing size of the Soo canal, improvements and aids to navigation in general, coupled with rapidly increasing traffic, have made this possible, and where a few years ago it was necessary to use one, two, or even three, tow barges to a propeller in order to move a profitable quantity of freight, to-day this necessity is gone.

The Whaleback Appears

The Whaleback made its appearance in 1889, but has now practically disappeared. They were fit only for bulk cargoes, were very uncomfortable for crews in rough weather, and with the improvement in the channels, their one advantage of carrying a large load on a light draft has disappeared.

The present type of bulk freighter has been developed to meet the requirements of limited draft and rapid handling of bulk cargoes, and has been improved from year

to year, until the latest vessels are admirably adapted to moving traffic at a minimum of expense and time, and also to meet general conditions of lake navigation.

The seagoing car ferry and the icebreaker are both types which have been especially developed on the lakes. When the Trans-Siberian Railway was being built, the Russian Government sent a commission to study the working of these icebreakers, and the ferries they built for service across the Siberian Lakes were duplicates of those in service across the Straits of Mackinac. The handling of railway trains on car ferries was recognized as a specialty during the Great War, and a corps of car ferry men were recruited on the lakes to handle the ferrying of cars across the English Channel.

The Modern Lake Fleet

While the Canadian Pacific Railway was building, the work of construction was much slower along the rocky shores of Lake Superior than it was from Fort William westward across the prairies. To bridge the gap, the Company built three steamers in 1883 on the Clyde. They crossed the Atlantic under their own steam, were cut in two at Montreal, towed up the canals in sections and rejoined at Buffalo. They operated between Owen Sound, Port Arthur and Fort William, and besides general merchandise, carried a great deal of material which went into the construction of the Western Section of the railroad.

The "Algoma" was lost in 1885, but her engines were recovered and put into the "Manitoba" when built in 1889, and are still giving good service. The "Alberta" and the "Athabasca" were lengthened in 1911 and 1910, respectively, and are still in active service. The "Assiniboia" and the "Keewatin" were added to the fleet in 1907, and although they have been surpassed in size, are as yet unequalled in seaworthiness and comfort.

Henry Beatty Built Early Fleet

The original boats were built under the supervision of Mr. Henry Beatty, father of President E. W. Beatty, of the C.P.R., and so well were they planned that notwithstanding their age they are still, as package freighters, equal to anything on the lakes.

Canada's Banking System

The Canadian banking system is universally admired, the more so since the war, when the Dominion's institutions, previously acting under a policy of conservatism, realized the advantages of establishing branches in foreign countries instead of dealing through other banks, and widened the scope of their operations to include the greater portion of the globe. The system of the operation of Canadian banks makes for simplification and thoroughness, whilst the unquestionable soundness of the chartered institutions affords the investor or client the most ample protection and satisfaction.

The regulation of banking, the incorporation of banks, and the issue of paper money in Canada falls exclusively within the legislative authority of the Dominion or Federal parliament, and there are no "provincial" banks corresponding to the "state" banks of the United States. Banks in Canada established under the Bank Act are called Chartered Banks, receiving charters from the Dominion government authorizing them to open branches and agencies, deal in coin and bullion, lend money on various

securities, and carry on generally a banking business, but they are prohibited from direct lending of money upon the security of shares in the capital stock of any chartered bank, or upon the security of real estate.

The System is Flexible

Canada's banking system is flexible, the banks having perfect control of the credit situation by reason of the limited number of chartered banks with an extensive system of branches covering the Dominion, Newfoundland, Great Britain, the West Indies, and some foreign countries. This puts the banking and credit systems under the supervision of a few large and powerful and well-managed institutions, headed by trained bankers, who are able to keep in close touch with conditions in every part of the country through the system of branches.

Canada has eighteen chartered banks with more than four thousand branches throughout the Dominion and Newfoundland. These are the Bank of Montreal, Bank of Nova Scotia, Bank of Toronto, Molsons Bank, Banque Nationale, Merchants Bank of Canada, Banque Provinciale du Canada, Union Bank of Canada, Canadian Bank of Commerce, Royal Bank of Canada, Dominion Bank, Bank of Hamilton, Standard Bank of Canada, Banque d'Hochelaga, Imperial Bank of Canada, Home Bank of Canada, Sterling Bank of Canada and the Weyburn Security Bank.

The Bank of Montreal is capitalized at \$28,075,000; two are capitalized at \$25,000,000; three at \$15,000,000; four at \$10,000,000; five at \$5,000,000; and one each at \$3,000,000, \$2,000,000 and \$1,000,000. The total authorized capital of these banks is \$194,075,000; the subscribed capital, \$116,665,200; the paid-up capital, \$115,834,923; and the reserve fund, \$122,273,225.

Extension to Foreign Fields

The past few years have seen a remarkable branching out into the foreign field by Canadian banks, which, once the movement was initiated, extended rapidly both by means of alliances with established banks and by the opening of branches of the Dominion's institutions. Canadian banks established branches overseas during the war for the convenience of the Canadian army and to handle the vastly increased international work the period threw upon them. In 1919, the Royal Bank of Canada entered Columbia, Argentina, Uruguay, Brazil, Buenos Aires, Montevideo, and Rio de Janeiro. The Dominion Bank made connections with the British Overseas Bank in London for the purpose of handling foreign trade, and the Union Bank of Canada affiliated with the Park Union Banking Corporation for the purpose of the Chinese and Japanese and other eastern trade.

Further extension continued in 1920. The Bank of Montreal acquired an interest in the Colonial Bank, a British organization with strong British West Indies connections. The Canadian Bank of Commerce established branches in Havana, Cuba, and Kingston, Jamaica, and intend commencing business in Rio de Janeiro, Brazil, Bridgetown, Barbados, and Port of Spain, Trinidad. The Royal Bank of Canada opened new branches in Barranquilla, Colombia, and Santos, and San Paulo, Brazil. Branches of Canadian banks are now to be found in the United Kingdom, United States, France, Spain, Italy, West Indies, Cuba, Mexico, Central and South America, numbering in all about one hundred and fifty.

The Industrial Outlook in Western Canada

By John Sweeting, Industrial Agent, Western Lines, C.P.R.

The Government of the Province of Alberta, through its Statistical Branch, makes the statement that an admittedly conservative estimate of the value of farm production and of live stock on the farms within the province at the end of 1920 reaches a total value of over \$430,000,000. It can be said that the agricultural and livestock values of the other Prairie Provinces of Manitoba and Saskatchewan would come within reasonable bounds of, or may exceed, Alberta's total, and thus a sum of over one billion dollars is seen as the value of agriculture on the Western Prairies.

In looking at the future of the West, it is permissible to emphasize the small proportion of available agricultural land that is to-day under cultivation as compared with the total area of arable land available for tillage and stock grazing. To these factors must be added the values of agriculture, minerals, forests, fisheries and other resources of the Province of British Columbia, as well as similar resources in the Prairie Provinces, and the as yet undiscovered or unproven potential wealth such as oil and other assets of the West.

Canadians, taking into consideration these well-known facts, realize that in a country yielding so abundantly there is only reason for progressive development and no reason whatsoever for doubt of a continuance of prosperity.

Renewal of Business Activity

It is a noticeable fact that the movement towards normal trading conditions has already commenced. Factories that have been working part-time or with reduced staffs are taking on additional men, and by the end of January a large number of plants will be again in full operation. In country districts, merchants are sending in orders to replenish stocks and the commercial traveller is finding conditions rapidly improving. The unemployment which has never

been excessive, has been taken care of in a practical way, and a few weeks will see the absorption of a large proportion of those seeking work.

On the Pacific Coast, discussions are now taking place with a view to a price-cut in logs while the retail lumber trade has under review the necessity of reducing cost of lumber. Campaigns are already anticipated looking to a continuance of active housing plans, and prospective building promises a better year than that of 1920. In Manitoba, the extension by the Manitoba Power Commission of power lines to 40 rural districts is asked. At Kenora, a large pulp mill is to be erected with one or two other pulp mills at Port Arthur and Fort William, one at Harrison, B.C., and another on Massett Island, B.C. Provincial governments are figuring on construction of public buildings, more especially for University extensions and utilities, and large sums of money are to be expended on main and rural roads throughout the West.

At this early date of the new year, so far as one can see, the promise is for many activities along all lines of development, and it is not difficult to forecast a period that will bring with it a maintenance of the prosperity of the Canadian West.

The Manitoba Dog Derby

Greater interest than ever is evinced this year in that unique event of the Northland, the Manitoba Dog Derby, which draws together the hardy, old-time mushers of the North with their famous dogs who have proved their prowess on many a long trail, and their ferocity in many a hard-fought battle. The annual race, of which the one to take place in March is the fourth, has come to be the great occasion of meeting for the "men of the high North," and each year sees a wider summoning to the event, bringing down veterans of the Yukon and Alaska to pit the qualities of their battle-scarred canines against the animals of the prospectors and trappers of Manitoba.

The starting point for this unusual Derby is Flin Flon, a town which has had a spectacular rise to fame as a mushroom mining sector, and the course lies over more than two hundred miles of deep snow to Le Pas, the gateway to all the Manitoba northland. There are nearly a score of entries covering the entire northern expanse, and the entrants will compete, materially for a purse of \$2,500, but in reality for the reputation of a string of dogs—the superiority of dogs of a section over those of any other strip of the Northland. The competitors are all well-known mushers of the North, men of powerful endurance inured to the long snowshoe trail, and with the blindest of faith in the teams they own. For the man of the North swears by his dog-team,

brags of their stamina and speed, and is known and respected oftentimes rather by the string of animals at the head of his sleigh, than by his name or personal attributes.

The Qualities of the Husky

Though much devolves upon the teamster in the race, who will mush the 200 hundred miles behind the sleigh, the determining factor in achievement is the quality and power of the dog-team. The husky of Northern Canada is a hardy, sagacious animal of wonderful endurance, inured through generations to the climate of the North and the arduous of the trail. He is a tremendous worker, all-enduring, and not infrequently made up partly of a blood relative, the timber wolf. He weighs anything from 125 to 160 pounds, and is covered with short, stubby hair, and an undercoat of thick fur. On the trail his food consists of frozen fish and meat. It is generally conceded that the husky can endure more hardship and go without food longer than any other dog of the North, and although the Derby was won last year by an Alaskan trailer, with native dogs, Manitobans are confident of carrying off the coveted honors this year with the course lengthened to two hundred miles.

The value of husky dogs in the Canadian northern expanse is very high and prices reach surprising proportions in the fall when each man sets out to secure a string for his winter's work. Due to the heavy expense incurred in equipping and maintaining a team, the purse for the race has been raised this year to attract the most exacting of trailers. Last Spring, pups were selling for \$200 for a string of five, whilst animals fully grown and trained brought from \$75 to \$100 each.

The husky dog has been a valuable servant to the men of the Canadian North, and his part in Northern development is no small one. His services are still of inestimable worth in the transport over snow-clad areas where no other means of travel exist, where the pioneers of civilization and progress are blazing trails, and securing the first fruits of a wealth which only time and the introduction of railroads will fully reveal for exploitation. The mounted police, trappers, miners, prospectors, all men of the snow-shoe trail, gallantly pay their tributes to the part the husky dog plays in their daily work.

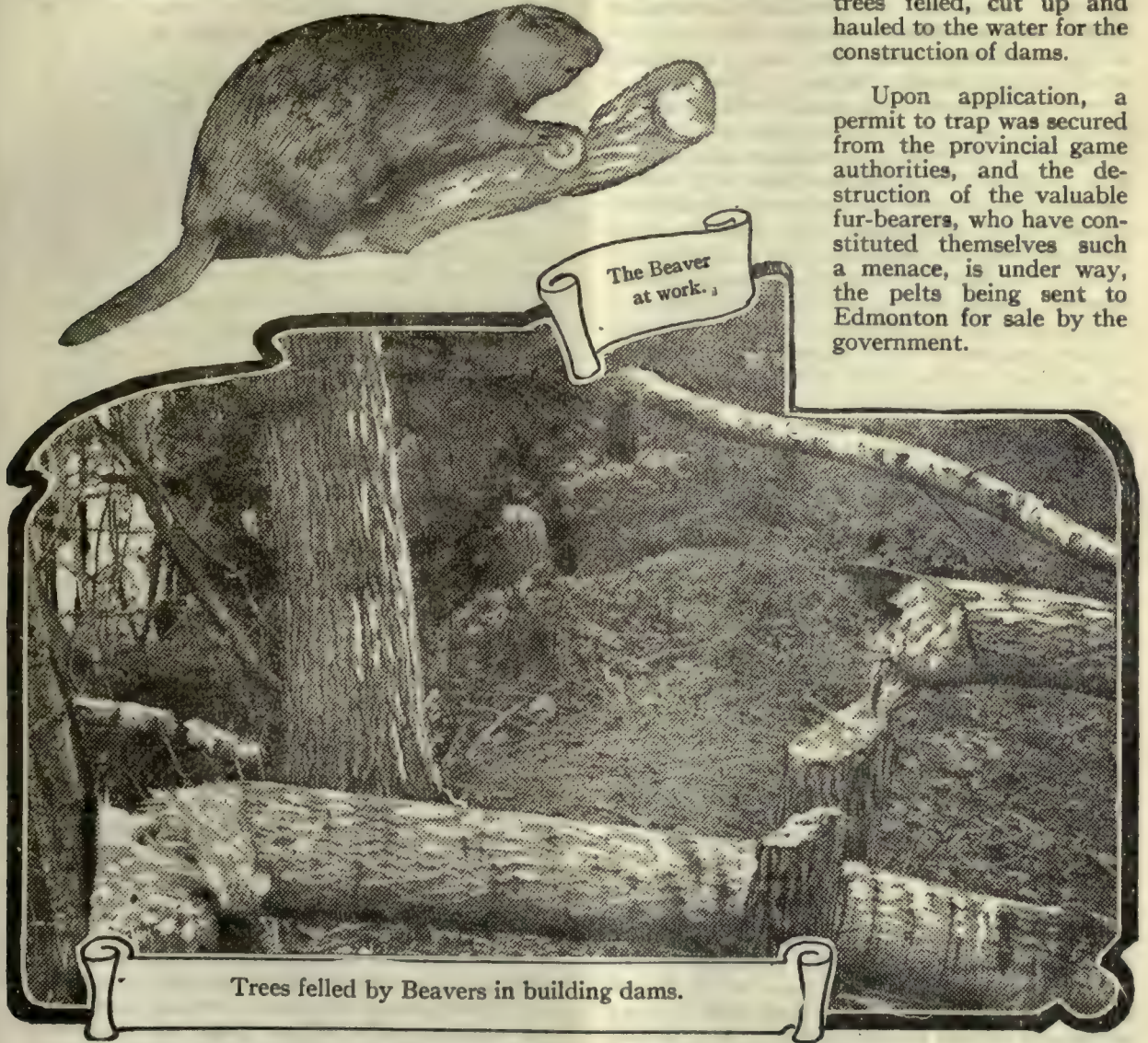
The Beaver at Work

When in Alberta, the energetic little beaver which, from the appearance of its couchant figure upon the Canadian national arms has come to be so distinctly emblematic of the Dominion, seemed to be faced with extinction due to extensive settlement and trapping, a permanent close season was governmentally

proclaimed. The resulting benefit is evidenced in the remarkable manner in which the surviving animals have multiplied, and from a few scattered colonies about the less settled areas of the province, have thriven to unprecedented numbers in prairie and parkland, penetrating even to the heart of the city of Calgary and on the bare plains where a clump of bush has the

prairie city and as such jealously guarded by the Calgary city fathers. The depredations of the beavers to the park's trees and shrubs first drew public attention to the serious menace they constituted, and before action was put under way, the landscape near the river presented a rude scene of destruction, much of the underbrush being cleared off and collected in heaps and many heavier trees felled, cut up and hauled to the water for the construction of dams.

Upon application, a permit to trap was secured from the provincial game authorities, and the destruction of the valuable fur-bearers, who have constituted themselves such a menace, is under way, the pelts being sent to Edmonton for sale by the government.



highest of sentimental and economic values, menacing the carefully guarded shade and shelter bluffs.

Calgary, the largest city of Alberta, springing picturesquely out of the prairie, woke up to the fact that she was harboring a colony of these little animals and resented the fact deeply, as they chose to make their home in a beautiful park which is a distinct acquisition to the

A Valuable Animal

The beaver is a precious animal. The value of its pelt remains consistently high, and the protection the animal has enjoyed widely in Canada for so long a period has been an additional factor in keeping prices up. Government protection in the past has practically precluded the domestic ranching of the animal, which has been found so interesting and profit-

able a pursuit in comparison with less valuable fur-bearers, but with the rapidity of multiplication to pest proportions, ranching under Government permits is becoming increasingly popular and promises to develop into an Alberta industry of some importance.

What is probably the largest fur farm in the West is a beaver ranch at Edgerton in Northern Alberta, where more than one hundred beavers are being raised with the confident expectation of providing a handsome yearly revenue as soon as it is believed that they have multiplied sufficiently to justify trapping. The ranch is located on the banks of a small creek which has been the home of a colony of beavers for years. Government protection gave them opportunity to increase to such proportions that they became a general nuisance when the owner of the land applied for permission to fence them in, breed them, and sell the increase. This was given and another line has been added to the diversified sides of farming in this section of Alberta.

At Lacombe, in Central Alberta, S. W. Paisley became interested in two colonies of beavers on his land, set out to study them, and became a master of the knowledge of their habits and ways. When they commenced to over-run his farm, he got permission to fence them in and "farm" them, and is now anticipating a substantial profit from his yearly toll. Three other farmers along the Ribstone Creek, seeing profit in the scheme and being annoyed by the large numbers to which colonies on their farms have attained, followed Mr. Paisley's example, and by fencing them in and encouraging them to build their dams, control the damage they do and secure a fine source of revenue.

An Economic Enterprise

Beaver farming is an economic enterprise when a colony has settled in a stream running through a farm, and the expense of operating is practically nil, it being only necessary to fence above and below the dam with a meshed wiring, and a few rods on either bank. Where several farmers along a stream are desirous of co-operating in such a venture, all that is needed is to fence the extreme ends of the watercourse, and by trapping in their own territory are fairly sure of getting the animals from their own colonies, as beavers seldom travel overland. Nor do they usually move their colonies so long as food is plentiful, so that when a shortage of natural nutriment occurs, the provision of a supply of such vegetables as carrots and turnips, planted near the banks where the sharp-toothed little creatures can reach them readily, will keep them from changing their location.

Beavers reared thus are still to be trapped under the regulations that cover "wild" beaver trapping, but with the new industry proving popular, it is possible that the Act will be amended.

Across Canada—Ottawa

In common with few other nations, Canada possesses a capital which is in no wise its metropolis. Ottawa owes its rise to national eminence to the burning by a Montreal political mob of the parliament buildings and the request by the Canadian Government to Queen Victoria to choose a site. Toronto, Kingston and Montreal all wanted it, and, as no settlement could be arrived at, the matter was settled in the above manner. And so, overnight, in 1857, the picturesque but otherwise then unimportant little city, situated between Toronto and Montreal, and almost on the boundary between the provinces of Ontario and Quebec, became the first city of Canada of that date, and, ten years later, the Capital of the Federated Dominion.

Under the name of Bytown, Ottawa was first incorporated a town in 1847 with 6,000 inhabitants, becoming a city in 1855 when its name was changed to the present one. Queen Victoria, in choosing it, probably was guided by its central position as regards the two provinces, its distance from the frontier, and its striking beauty of site and surroundings. While at the time, doubtless, its selection gave rise to dissension and dissatisfaction, it has apparently justified the choice, and, to-day, with general satisfaction, all roads lead to Ottawa.

The Heart of the Dominion

From Ottawa, Canada is governed. Here resides the Governor-General, the King's representative and Canada's tangible link with the remainder of the Empire; here sits Parliament, senate and legislative assembly; here pulses the governmental heart of the vast Dominion of nearly four million square miles which sends out its arteries to the nethermost portions of the giant body circulating the blood which vivifies it as a unit of the British Empire.

Picturesquely situated on the Ottawa River, set amid scenery which is typically Canadian in its wild beauty, Ottawa is one of the fairest cities of the Dominion and it is a continual endeavor to maintain it in this respect, the rival of older governmental centres. The city and environs have thirty miles of laid-out drive-way and two thousand acres of charming parklands. Its legislative buildings form an imposing aggregation, and the various departmental offices and public utilities contribute to the beauty of the city's possessions. Such are the valuable institutions of the Royal Victoria Museum, the Parliamentary Library, the National Art Gallery, the Royal Observatory and the Royal Mint.

Ottawa has a population of 107,732 and a total assessed property valuation of \$120,463,606. In the matter of transportation, it is admirably served by nine steam railroads, giving it the best possible communication with every impor-

tant centre on the North American continent, and eight water routes, including the Rideau Canal, to the St. Lawrence and Great Lakes, Montreal and the Atlantic seaboard. It is to the fore as an educational centre, possessing many fine colleges and academies and a splendid public school system. The city is surrounded by attractive summer resorts, whilst winter sporting areas are in close proximity.

Important Industrial Centre

Though the city largely exists as the Dominion seat of government and a large part of its population depends on the multifarious governmental departments for subsistence, it is by no means insignificant as an industrial centre and has never lost its prestige as a lumber centre. There are about two hundred industries supported by a capital of more than fifty million dollars and giving employment to over seventeen thousand people. Important among these manufacturing establishments are wood products, paper mills, match factories, cement, carbide, marine gas buoys (the only factory in the world), iron works, mica and clothing. Industry is here assuming larger proportions yearly.

As a government centre with such a large portion of its population engaged in government offices, the progress of the city hinges on parliamentary affairs, matters legislative pervade all, and the atmosphere is purely governmental. Periodically, it is thronged with Canadian statesmen from every part of the wide Dominion, who gather there to formulate legislation. Here, too, congregate parliamentarians and government representatives from other countries, who, with the French-Canadian section of the populace, serve to give Ottawa at times a tinge of the cosmopolitan.

Immigration Prospects for 1921

When the immigration figures for the year 1920 are completed and published, it will be found that about 200,000 new citizens were added to Canada's population during the twelve months, according to the estimate of the Hon. J. L. Calder, Minister of Immigration and Colonization, based on the returns of the first ten months of the year. For the month of October, the last period for which complete figures are available, immigration totalled 14,852, of whom 7,602 came from the British Isles, 3,945 from the United States, and 3,305 from other countries. This makes an aggregate immigration to the Dominion for the ten months' period from January first of 137,185; of this total, 69,148 came from the British Isles, 43,194 from the United States, and 24,843 from other countries. The returns for the two following months, to complete the year's figures, will no

doubt swell the aggregate to the estimate of the Minister of Immigration and Colonization.

The figures of 1920 are particularly interesting as belonging to the first post-war period in which there was anything like an indication of a getting back to pre-war economic conditions in general, and because they clearly show the tendency of a resumption of the emigration flow which the outbreak of hostilities and the continuance of the conflict interrupted.

The flow from the United States during 1920 marked a restoration of the interest in the Dominion which arrived at its peak just prior to the war, and there can be no doubt but that the tide from across the border is recuperating its old strength. During the first eleven months of the year, American settlers to Canada totalled 46,452, and brought with them wealth in the shape of cash and effects to the extent of \$17,519,003. The final figures for the year will put America's human contribution to Canada somewhere around the 50,000 figure, and the accompanying wealth over the eighteen-million dollar mark.

European Immigration Heavy

In reviewing Canadian immigration for the year 1920, however, the outstanding feature of the situation has been the resumption on such a tremendous scale of the human tide from the British Isles and other European countries. Though 1920 cannot possibly rival the banner year of 1913, when 150,542 persons came from the British Isles to Canada, the limitation of transport was solely responsible for this, and thousands who hoped for passages were disappointed. The Hon. J. A. Calder, who made an exhaustive and complete investigation of conditions on the other side of the Atlantic, stated on his return that all trans-Atlantic liners were booked up solidly for the next year and that the real unstemmed tide could not be expected until the Spring of 1922, whilst Colonel J. S. Dennis, probably the foremost authority on Dominion immigration, stated on his own return from a European tour of investigation, that availability of transport would be the only limitation of European emigration to Canada this year.

It has been variously estimated that Great Britain has a population in excess of pre-war years, of from 600,000 to 1,200,000. Whilst in the years before the war the country had an annual emigration of about 250,000, this ceased practically entirely during the years of hostilities, and statistics show that the birth rate rose in the same period. Figures recently published go to point out that there are at least 250,000 men in Great Britain out of employment, and, in addition, some 46,000 women without positions. In view of these facts, the congestion and unemployment, it is plainly seen that the only solution lies in emigration.

Canada Overwhelmingly Popular

Evidences of the trend of popular thought towards the British Dominions as a new bourne for their energies are not wanting, and despite the fact that Australia and New Zealand offer added inducements in the way of free passages to emigrants, Canada would appear to be overwhelmingly popular, and of the applications which have poured into the Overseas Settlement Committee at the rate of 1,000 per week, which with the dependants involved represents at least 3,000 persons weekly, the majority favor Canada as their future home.

In the existing situation, Canada's endeavor is to stem the tide, and she is able to follow a careful policy of selection, picking and choosing her future citizens. The system at the ports of entry entails the most rigorous sifting, and the recent enactment necessitating the possession of \$250 by an emigrant, \$125 for a dependant over eighteen years, and \$50 for children, is the utmost possible assurance against possibility of dependency on the country. Since the termination of the war, the activities of the Dominion have been directed largely towards the establishment of her ex-service men, the transportation of the dependants of many of them from across the sea, the settlement on the land of a certain number of Imperial soldiers, and the encouragement of girls for domestic service and like work. During the present year, however, it is confidently expected that conditions in Canada will make it possible to broaden this policy, throwing open the doors wider, and permitting entry to other classes of British settlers who are clamoring for passages across the Atlantic. American emigration will, to a great extent, look after itself, as the majority of those coming up from across the international border are farmers in circumstances to go immediately on the land and become assimilated, producing citizens in the shortest possible time.

Canada is acting not only in the best interests of her people at home, but having the welfare of new-comers to her shores at heart also. Her object is to have every immigrant a satisfied settler, to place them in a position where they can immediately best help themselves—out upon the broad highway which for the energetic worker is the opportunity to prosperity.

Progress in Newfoundland

The island of Newfoundland is essentially a fishing country, and revenue from this source so far outstrips returns from other products that the latter are cast into shadow. The island fisheries are worth more than two millions annually. The most important fish from the point of output and revenue is the cod. Nearly 1,000 men and 56 large vessels are engaged in the bank cod fishery, and 39,680 men and 15,120 small vessels in the shore cod fishery. The sea

further swells the island's revenue with its returns of lobsters, whale and seal.

Great Agricultural Possibilities

Nevertheless, the island possesses great agricultural possibilities, which the government is endeavoring to further encourage and develop, and almost supplies its own needs in farm and dairy products, the amount of importations, excluding flour and oats, being only fifteen per cent. The yearly agricultural production is worth upwards of \$3,000,000, and the island possessed 13,288 horses, 40,427 cattle, 100,447 sheep, and 27,575 hogs at the last census. Its population was nearly 250,000 in 1911, according to the Government Year Book for 1920.

The island has also the largest iron ore deposit in the world, the total scattered resources of the island being estimated at 3,600 million tons. Most of the raw material utilized by the Dominion Steel and Nova Scotia Steel Corporations is drawn from this source. There are also valuable coal deposits which have been mined for some time, and are now being extended. The government is taking the unique step of entering itself into the mining industry and engaging in mining and marketing coal. There are valuable pine forests in the north of the island, and a sawmill industry has been built up and is continually active.

Government Establishing Stock Farm

With the intention of improving the animal husbandry of the island, a government stock farm is being established near the city of St. John's. The Minister of Agriculture visited the Canadian National Exhibition at Toronto last summer, and personally selected pure bred horses, cattle and sheep which were shipped through to St. John's.

Important development of the great pulpwood resources of Newfoundland is being undertaken under two grants recently issued, one to a British and the other to a Norwegian company. The Anglo-Newfoundland Development Company, some years ago, purchased timber limits and have had a pulp mill in operation. This concern has, for some time, been supplying the Northcliffe papers in England with paper.

Boys' and Girls' Clubs in Manitoba

*By T. S. Acheson, General Agricultural Agent,
C.P.R., Winnipeg.*

To make one's life more attractive, to give it an outlook, to make one realize that his avocation is going to call for mental ability of high order as well as for physical strength, is an important and interesting task. If this can be done, and, at the same time, pleasure had and lasting friendships formed, profit and recreation will happily mingle.

This is done through Boys' and Girls' Clubs, and the teaching in the public schools of Manitoba of agriculture and home-making. In 1912, seven such clubs were organ-

ized with an initial membership of 750, and so popular has the movement proved that there are to-day 240 such clubs, 1,500 branch clubs and a total membership of 30,000. Practically all girls and boys between the ages of ten and nineteen years in that province—outside of the cities—are members of the clubs, with the result that future emphasis in this connection is directed towards making the work more efficient.

For organization purposes, the Public School Inspector Division is taken as the unit and the Public School Inspector is chief executive officer. General organization work is under the charge of the Agricultural Extension Service, and from two to four members devote all their time to club work throughout the year, while at certain busy seasons of the year, when, for instance, club fairs are being held, the whole Extension Staff as well as the majority of the Agricultural College Staff turns in to help judge the thousands of exhibits that are on display at these fairs.

Government Encouragement

Government encouragement of the movement is shown in the provision of 50% of the money paid out in cash prizes on agricultural and home economics, and 50% on school exhibits up to 15% of the total Government grant; the amount required for such purposes this year was \$20,000. Manitoba is the only province that tangibly assists clubs to hold fairs in this manner, and after four years' experience they are evidently well satisfied with the result and convinced that such assistance has materially contributed to the success of the movement.

For the present it is necessary to depend on local volunteer adult leadership, and this leadership has been provided by such organizations as the public school teachers, agricultural societies, poultry associations, and by those with vision wide enough to see that the success of the community depended on the success of all individuals in the community.

The work is confined to a few well-defined projects, there being six in agricultural and three in home-keeping. However, the girls do not confine themselves to strictly housekeeping subjects, but are frequent competitors in almost every phase of agricultural work, and occasionally a boy is found who shows expertness in the home-making projects and whom they believe will be eagerly sought after in later years.

The number taking part in the various projects as shown by the following list, namely, gardening, 15,000; sewing, 12,000; cookery, 12,000; poultry, 5,000; canning, 5,000; live stock, 4,500; grain growing, 2,500; dairying, 2,300; and woodwork, 1,800, indicates that some subjects are more popular than others. The difference is more a question of circumstances. Many club members living in towns cannot go in for livestock, grain growing and dairying to the extent that they would like, and, generally, these cannot be taken up in the country except by the

'teen age members, while in the projects like gardening, poultry raising and sewing, all members can take part.

Their Motto: "Achievement"

The four-leaf clover, the emblem of good luck with a capital "H" on each leaf, has been adopted as the club emblem. The four "H's" typify the all-round development which club work stands for, "Head, Hand, Heart and Health."

In the past, the greatest emphasis has perhaps been placed on the training of the hand through agricultural and home-making pursuits. The 1921 programme, however, will emphasize the four-fold function of club work, and will seek to develop well-balanced, thoughtful, energetic, companionable, country-minded boys and girls.

The feature of club work that makes it superior to practically all other 'teen age organizations, such as the Boy Scouts, Cadets, Tuxis Squares, Trail Rangers, etc., is ownership. Practically all the good features in these splendid city boy organizations are included in the Boys' and Girls' Club scheme, and, in addition, provision is made for each member to raise chickens or pigs or calves and sheep—to plant a garden and preserve the products,

to have a quarter-acre plot of certified disease-free potatoes, and, lastly, to be able to sell their product and open a snug bank account, not for the purpose of hoarding, but to have it available for use when a favorable opportunity presents itself.

No Idea of Money Value

Neither the boy nor girl who has no money to spend, nor the one who gets all he wants to spend, has any idea of the value of money or how to advantageously spend it when

they do happen to have it, compared with the boy who earns it and is free to invest it as his judgment suggests.

A feature of club work developed during the past year that offers great possibilities is team demonstration work. A demonstration team consists of three girls or three boys, a captain and two assistants. Such a team will take an agricultural or home economics subject and by dramatizing it, invest it with such interest that not only do the members of the team, but those who have the opportunity of listening to them, see in it a subject capable of untold interest and investigation.

The captain of a cow-testing team, for instance, will give an interesting review of dairy cattle from the time of the Pilgrim Fathers, when John Alden is said to have taken Priscilla Mellen to their future home on the back of a Holstein bullock, up to the present, when magnificent herds of Holsteins, Ayrshires and Shorthorns are to be found in many parts of the province. While she is giving this description, her team-mates are busily unpacking a Babcock tester and preparing for a demonstration of its use. Not more than ten minutes is taken by the captain with the historic part of the programme. She then steps aside and is soon busily engaged with a part of the mechanical work connected with the demonstration, while one



THE MODERN CANNING TEAM, CHAMPIONS OF MANITOBA.

of her team-mates takes her place and explains the theory of cow-testing and its advantages. The third member then explains the make of the machine, tells something of the inventor, and shows how to use it.

Co-operation the Key Note

The members work together with such clock-like regularity that one or other is always speaking and the two are doing the actual mechanical work at the same time, and when the demonstration is completed, the table is cleared and everything packed away.

Team demonstration work develops co-operation, the ability to speak in public, habits of reading and research, neatness, accuracy and speed, local pride in the community and a good practical knowledge of the subject.

Manitoba has teams on canning, cookery, sewing, garment dyeing, stock judging, vegetable judging and grain inspection. Recently, one section of the district champion demonstration team spent a whole week in Winnipeg in sight-seeing, entertainment and education, as a reward for achievement in club work for their respective districts.

By these means, agricultural education is being made a joy and entertainment to thousands of Manitoba's boys and girls. The movement will make for better and happier homes and greater agricultural future output.

The Labor Situation

A survey of the general labor situation during the month of December exhibits a continued steady decrease in the general average of employment throughout the Dominion, but a smaller loss in time due to strikes and industrial disputes. The month witnessed a further gratifying decline in the cost of the weekly family budget in comparison with the previous months.

The decline in the total average volume of employment was fairly general during the month, though in the Maritimes, conditions were favorably affected in the early part of the month by the opening of the winter ports. Metals, machinery, and conveyances groups of trades were seriously and widely depressed, this state being observed more seriously in railway car and shipping. Shipbuilding in British Columbia was an exception. In the food and liquor, there was also a decline, this being particularly marked in the Ontario milling industry, and Quebec abattoirs and packing houses. Biscuit and confectionery establishments in the Maritime provinces and Ontario suffered. The textile and clothing industries continued to register substantial declines, especially in the garment, thread, yarn, cloth and knitting factories of Quebec and Ontario.

Seasonal Slackness Fairly General

Declines were also fairly general through the pulp and paper industry, the staffs in many mills in Quebec and Ontario being largely reduced. Decline continued in woodworking, clay, glass and stone groups, especially in trades supplying material for building and construction. Employment in connection with transportation, both on railways and by water, was slightly less than in the preceding month, though some activity was noted in the Maritime ports.

Mining, other than coal, was less active, the decline being most noticeable in British Columbia. The coal mining started the month with gains, but dropped towards the end. The usual period of seasonal slackness affected the sawmills, but work in the woods generally gave added employment.

There were in existence during the month ten strikes, involving about 1,554 workpeople and resulting in a time loss of 14,654 days. This was less than in the previous month or the corresponding month in 1920.

The movement of prices continued downward, but there were the usual seasonal advances in eggs, though butter, cheese and milk showed unusual declines. In retail prices, the average cost in sixty cities of a list of staple foods at the middle of December was \$14.84, as compared with \$15.32 at the middle of November, and \$14.73 in the middle of December, 1919. The chief decrease of the month was in sugar, but there were substantial declines in meats, and a slight drop in practically all foods.

Transport of Fort Norman Oil

The strike of oil by the Imperial Oil Company at Fort Norman, north of the Peace River country, has aroused wide-world interest in the potentialities of this field. Hundreds of prospectors are ready to jump off from the end of the steel with the advent of spring to make their way to this region, whilst others still more enterprising have chartered aeroplanes to steal a march on the mushers and trailers in the anticipated rush. Negotiations are said to be under way for the establishment of an aerial service from Fort Norman to Edmonton, a distance as the crow flies of about 900 miles, which calls for landing stages at intervals en route and the situating, before flying is commenced, of depots of gasoline, accessories and other requisites for successful flying.

But stupendous as is the interest the strike has awakened in all prospectors, oil men, and investors, it is scarcely more so than that of devising the most practicable and economic method of transporting the product of the well and others which may be struck in the Mackenzie River basin, over the half-explored region which lies between it and the nearest shipping point by rail. Over this, many able minds are working. The Fort Norman field in the Mackenzie basin is situated about 1,500 miles north of Edmonton, the Alberta capital, and 1,000 miles from Fort McMurray, the most northerly point of railway contact. The country between consists of a vast stretch of rolling, lightly-timbered, well-watered country, hardly yet explored, rich agriculturally but possessing no roads of any kind whatsoever or other means of transportation. To get the oil from the well already struck (which, in itself, it is considered

hardly justifies the building of a railroad) is the problem confronting engineers.

Tank Barges or Pipe Line

One method considered to be practicable and economical is the transport of the oil product from Fort Norman to Fort McMurray by steel tank barges. The oil well is situated near the Mackenzie River, up which these reservoirs might be floated for 500 miles to Great Slave Lake. They would emerge from the lake by Slave River, where rapids occur for five or six miles, necessitating the introduction of a pipe line for this distance, and arrive at Fort McMurray by way of the Athabasca River. An alternate method would be to take the oil north by the Mackenzie River to the sea coast of Mackenzie Bay, a trip of 400 miles, presenting no difficult problems but only feasible in the summer time. To transport the oil to the Pacific coast of British Columbia at the nearest point would necessitate the construction of a railroad 580 miles in length.

Another scheme which has been proposed and considered is the conveyance of the oil by pipe line from the Mackenzie River basin to Behring Sea, whence it might be shipped by tankers to the world's markets, and a Bill to sanction this scheme is at present under consideration by the legislature. The proposed line would be laid via the Yukon River systems to salt water. Dr. Alfred Thompson, member of the legislature for Yukon Territory, and one time gold commissioner for the territory, predicted as far back as 1887, when already many believed in the oil possibilities of the river basin, that this method of getting the product to the market would some day be adopted.

Route Not Regarded Favorably

From the viewpoint of the conservation of Canada's industrial resources for her own use, or from the wider view of control of such resources for the benefit of the Empire, this proposed routing of the oil is not regarded favorably. It would mean direct shipment of all oil production from the new Canadian field to foreign countries and the loss of all subsequent benefit arising from its commercial utilization.

With the brains of the best engineers devoted to scheming out the most feasible and economic project, there is no doubt that when the advent of the spring again opens up the country to active operations, a successful scheme will have been evolved for putting the product of the Fort Norman Field on the world's markets. The successful strike would seem to have proved the potentiality of the field; the ensuing problem is the inevitable one of the pioneer.

The development of the country will undoubtedly be followed by the penetration of the railroad and the adding of a new area to industrial Canada.

Nova Scotia's Fisheries

By M. H. Nickerson, Fishery Officer, Dept. Industries and Immigration, Nova Scotia Government, Halifax, N.S.

Nova Scotia is a large peninsula lying coastwise to the other Maritime Provinces of Canada, and the surrounding sea is plentifully stocked with all varieties of food-fish common to northern waters. Its seaward side, for its entire length of 300 miles, slopes gradually to a low shore, facing to the south-east, and washed by the Atlantic ocean; it is easy of approach, well provided with navigation aids; not wanting in commodious harbors and abounding in handy coves, the bases of operation for the musquito fleet (shore boats of all kinds). The climate is somewhat milder than that of other localities in the same latitude on this side, and fishing of one sort or another is carried on the whole year round.

The geographical position of Nova Scotia gives it superior advantages for successfully prosecuting both the sea and shore fisheries. It has been aptly termed the natural fish pier on this side of the North Atlantic. Considering its size and the number of inhabitants, it certainly leads in this important pursuit; and this has been the case since it became a British province. At present the outlook is perhaps more promising than at any other period.

For descriptive purposes, the fish grounds may be grouped as follows: (1) The shore belt extending along the whole coast covering an average of ten miles in width; (2) The inner banks occurring at intervals, as separate shallows, at a mean distance of thirty miles from land; (3) The greater banks comparatively few and far apart, anywhere from 100 to 200 miles at sea.

The first area abounds in the following species, which are here enumerated in the order of their values: Cod, lobsters, haddock, mackerel (in season), halibut, herring, salmon, pollock, smelt, swordfish and tuna, besides certain bait fish, oysters and clams, the last two being cultivated only in a few sections, but capable of more extensive development. The inner banks yield a similar crop with the exception of netfish and crustacea, while the outlying areas are worked chiefly for cod, haddock and halibut.

The Craft Employed

The craft employed in the shore-belt are smooth-work boats of ten tons and less, moved by gas power and capable of considerable speed. They are equally adapted to the several divisions of fishing in that area, and their catches include the kinds peculiar to the same by a sort of rotation agreeing with the season and the frequency of the species. Groundfish and crustacea are always persistent; school-fish, as elsewhere, being of periodic appearance. The cost of each boat is about \$800, and they carry each a crew of two or three men. Schooners, ranging from twenty to fifty tons, fish the inner banks generally. They have both sail and gas power, making an average trip in two days. A crew of twelve (two to a dory) is the common practice. This pursuit is confined to a few sections of the coast, namely, those within easy striking distance from the said scattered grounds. The great banks are fished by large schooners of fine model and best sea-going qualities from 80 to 150 tons, manned by a crew of fifteen to twenty-four. All these vessels carry auxiliary power.

The inshore fisheries are conducted by means of nets, seines and traps (weirs) for mackerel, herring and salmon; handlines and set-trawls for groundfish, harpoons for swordfish, and sometimes for tuna as well. For the inner and outer banks, the methods most in use are the handling from dories (seldom from the decks) and trawling with ground line of great length set with baited hooks. The otter trawl, on trial in these waters for the last few years, is rapidly going out of use. Purse-seining for mackerel, once in vogue in Nova Scotia but long since abandoned, is now being revived in some of the most enterprising ports.

A pioneer fleet has already been put afloat (the coming year will witness an increase in that force), and it is confidently expected that results on a gratifying scale will attend this new line of activity from which the United

States seiners reap a very profitable harvest. In lobster fishing the most effective gear is a sunken cage made of laths and specially contrived, one boat generally operating no less than 200 of these "traps."

All fishermen are conveniently classed in Government reports as going in boats or vessels, the former working the shore-belt only and the latter the outer and inner grounds respectively. The boat fishermen, who in a vast majority of cases own the craft which they manage, number approximately 20,000, while the latter, frequenting the outer banks, may be set down at about 5,000. The home port for the grand bankers is Lunenburg, the real fishery emporium of Atlantic Canada, rivalling Gloucester (the notable New England head centre), both in units and production. Just now, members of the crews are often part owners in the vessels which they man; a sort of co-operative system which accounts for the successful voyages. A single trip takes up several weeks.

Handling the Catches

The inshore takes, as a rule, are sold to local dealers (large firms or small companies) fresh from the boat. As the case may require, these catches, according to kind, are handled in the following manner: salted and dried; exported fresh or frozen; cut for steak and boneless; pickled; smoked; or canned. The fares landed from the inner banks are treated in the same way on most portions of the coast, as the trips are of short duration and the fish, consequently, in good condition for the different processes. The catches of the great bankers, however, whose trips sometimes run into months, must be dressed and salted as soon as brought aboard by the dories. When landed, these fares are "washed out," dried, and exported in containers called drums, mostly to the West Indies and sub-tropical countries in Europe and America. The fresh frozen goods and those otherwise prepared are sold in Canadian markets or exported to the United States, where the largest consuming areas are located.

Of the annual lobster catch, second largest in value and importance, rather less than one-half is canned in the local factories, the balance being exported alive to the United States where exceptionally high prices are obtained. In districts not too remote from the foreign market, the fishermen themselves are the shippers of their own individual hauls, thus realizing market prices at the least expense and without the services of middlemen other than their own consignees and commission merchants. This is a point of vantage which constitutes the main factor in the prosperity of the shore settlements in Nova Scotia.

On the South shore, the weather is never severe enough to suspend fishing operations for more than a day or so at a time, the harbor and roadsteads keeping open in the coldest months, because the ice-forming winds, which are only from the north, blow directly off shore, and are never of long duration. Generally speaking, the rotation of fishery crops, previously alluded to as taking place every year with the passing seasons, consists of groundfish, mackerel and salmon; in spring, the first-named continue through the summer with the addition of haddock, halibut, and pollock later; in the fall months (haddock persisting), herring, mackerel (southward migration), oysters, swordfish, tuna and some other species; and in the winter, cod, halibut, and hake by the inshore fleet and smelt fishing streams. Open lobster seasons are fixed by law and differ according to conditions east and west, none exceeding three months in length.

Therefore, some branch of the great industry is prosecuted every month of the year, and no active fisherman of proper push and ordinary resources need idle for a single week.

Annual Value of Fisheries

The total yearly value of Nova Scotia's fisheries is estimated now at \$15,000,000 in round numbers. This sum represents the value of the fish when brought to land or,

in other words, it is the aggregate earnings of the whole number of fishermen. It will be observed that the per capita amount is \$600, but in many instances the individual earnings are much higher, and as among the inshore fishermen, where the boat is operated by the owner and one or two of his sons under age, the value of the year's work to the family would be nearly three times the amount of the rate per head. The calling, as conducted in Nova Scotia, taking one season with another, may be considered as fairly remunerative, with an undoubted future development which will raise it to a still higher standard in the provincial field of labor. It should be added that the value of the total yearly product when marketed has been placed at \$20,000,000.

Some branches of the inshore fisheries are regulated as to season and gear by the Canadian Federal Government, which exercises a certain jurisdiction over the industry as a whole. The laws are designed to preserve the species and guarantee the rights of the fishermen individually. The said Government also pays an annual bounty for the encouragement of the fisheries, the portion allotted to Nova Scotia being about \$100,000 a year, divided by a slightly different scale as between the owners of boats and crews on the one hand, and the vessel owners and crews on the other. The latter receive the larger share per man and tonnage rate.

With few exceptions the fishermen realize the proceeds of their labor with the least possible delay, the catches of the shore boats being paid for in cash at the point of landing. The men on the great banks receive a settlement in the same way and at stated times. This system, a vast improvement on that which obtained fifty years ago, now enables fishermen of all classes to own their homes, secure a comfortable livelihood and even enjoy a moderate share of luxury, while maintaining a degree of industrial independence unknown among ordinary wage earners.

The Jack Pine Finds Favor

• The Jack Pine has quite recently and suddenly come into favor in Canada. Previously regarded in the light of a rather useless member of the timber family, the prodigal exploitation of more aristocratic woods has turned attention to it with the discovery that it possesses many hitherto unknown properties of value. Heretofore used solely for the extraction of certain chemical qualities, for railway ties and for kraft wrapping paper, its utilization has been decidedly limited and pulp and paper manufacturers have practically ignored it in their operations. Now, the discovery that Canadian Jack Pine can be successfully used in the manufacture of either sulphite or groundwood pulp sets a new value on the Dominion's millions of cords of this wood and ushers in the era of the Jack Pine.

Before the time came about of a dawning of the realization that Canada's pulpwood supply was anything but inexhaustible, a wasteful selection was the rule in the forests, but the depletion of the most desirable species of woods compelled a search for substitutes of those trees once considered essential. This search for substitutes has, in many cases, revealed the fact that they are equally as good, and sometimes better than the original woods used.

Not many years ago, spruce was considered the only wood which could be used in the

manufacture of newsprint. Gradually, and with much opposition, balsam was admitted in mixture with spruce, until now it is accepted in practically unlimited quantities.

A Substitute for Spruce

The despised Jack Pine is now suggested as a substitute for spruce, and the research departments of several of the progressive pulp and paper organizations have established the fact that it is quite feasible to use Jack Pine in either sulphite or groundwood processes of pulp manufacture. Laboratory investigations have disclosed the fact that the fibres of Jack Pine are longer than the fibres of spruce, and that the amounts of fats, resins, and waxes hitherto assumed to be detrimental, are not sufficient to preclude its use as sulphite pulp. It requires, however, a stronger acid and a longer cooking than other species and must, therefore, be manufactured separately. In the mechanical or groundwood process, it will make just as good, if not better, a pulp than any on the market.

A utilization of Canada's extensive Jack Pine resources will materially prolong the life of the pulp and paper industry in the Dominion, and defer the necessity of leaving the older limits near transportation and other facilities. Though information on the Jack Pine supplies of Eastern Canada is meagre, it is sufficient to estimate the available resources of pulp wood at not less than 60,000,000 cords.

Facilitate Exploitation of other Woods

In the Prairie Provinces, there is probably about 120,000,000 cords, and in British Columbia more than 20,000,000 cords of lodgepole pine, which is closely related to the Jack Pine of the east. In addition there are large areas of Jack Pine and lodgepole pine, which will reach merchantable size within a comparatively short time. An important point of survey is that the utilization of Jack Pine as pulp wood will facilitate the exploitation of spruce and other species in places where there is not sufficient of the latter alone to warrant logging operations, and this should, in a large extent, reduce wastage.

There are many qualities of the Jack Pine which recommend it for a continuous forest crop. It is extremely hardy and grows on the poorest soils. It reproduces more prolifically than any other conifer in Eastern Canada as is evidenced by the way it replaces other woods following cutting or fire. It grows rapidly, and under natural conditions will attain pulpwood size in a shorter time than spruce or balsam. These properties, since the discovered value of the wood in the pulp and paper industry, would suggest an extensive use of the Jack Pine in reforestation, as well as the utilization of the Dominion's substantial standing resources.

Departmental Publications

Any of the following publications will be sent free on request.

Alberta, Saskatchewan and Manitoba.—A descriptive statistical booklet on the three prairie provinces with full information on the West.

The Western Provinces of Canada.—Booklet devoted to history, progress, development, and possibilities of Western Canada.

The Park Lands of Central Alberta.—Descriptive of the area tributary to the Calgary and Edmonton line of the Canadian Pacific Railway in Alberta. History, description of soils, development, lands open for settlement, and information for settlers.

Irrigation Farming in Sunny Alberta.—Full description of Alberta's irrigated lands, their progress, production and possibilities.

Improved Farms in Eastern Canada.—Lists of unoccupied farms in Ontario, Quebec, New Brunswick and Nova Scotia, together with area, adaptability and prices.

List of Improved Farms in the Annapolis Valley.—Index to farm openings in the beautiful Nova Scotia valley, extent of holdings, and prices.

Business and Industrial Openings in Western Canada.—Full listings of industries existing and business openings in the provinces of Western Ontario, Manitoba, Saskatchewan, Alberta and British Columbia.

Canadian Pacific Reserve Farm Lands in Lloydminster and Battleford Districts.—Information of Canadian Pacific lands in these districts, history, farming information, progress, and possibilities.

What Some Settlers Have Done in Western Canada.—Stories told by settlers from many lands, of the success they have achieved on Western lands.

Canada's System of Government.—Canadian government briefly outlined to portray its democratic traits.

The Story of Canadian Nickel.—History of the nickel mining industry.

Canadian Oil Exploitation and Prospects.—An expert engineer's history of Canadian oil development and future possibilities.

Canadian Water Power Development.—Authoritative and exhaustive survey of water power reserves and possible development.

Paper Pulp from Flax Straw.—An investigation engineer shows the possibility of the development of a new industry in the West.

A Canadian Grain Handling Plant.—How Canadian grain is stored and shipped. Authoritative article on Canadian elevators.

Value of a Settler to Canadian Railroads.—Computation from reliable statistics of a farming settler's revenue-producing worth to Canadian railroads.

Returned Soldier Land Settlement Scheme.—Details of settlement conditions of returned soldiers on the Company's lands in Western Canada.

Bituminous Sands of the Athabasca Region.—Description with known values, and possibilities of development of the widely known tar sands of Northern Alberta.

The New Canadian Oil Field.—Dealing with the Arctic oil region of the new strife.

Water Powers of the Maritimes.—Authoritative article on the undeveloped power systems of the Eastern provinces.

Water Powers of Manitoba.—The water powers of this province dealt with exhaustively.

Oleomargarine.—History of oleomargarine in Canada and its future prospects.

Synopses of Natural Resources.—Forty-five pamphlets dealing briefly but concisely with Kaolin or China Clay, Oil Shales, Mica, Fluor-spar, Asbestos, Molybdenum, Magnesite, Fruit, Flax Fibre, Nickel, Coal, Clays, Salt, Copper, Zinc, Silver, Gold, Pyrites, Iron, Potash, Talc, Feldspar, Platinum, Phosphate (apatite), Manganese, Graphite, Cement, Barytes, Gypsum, Irrigation, Petroleum and Natural Gas, Corundum, Sulphates of Sodium and Magnesium, Timber and Pulpwood, Fish, Fur, Peat, Grazing Lands, Mineral Waters, Building and Ornamental Stone, Whaling, Sealing, Wheat, Oats and Barley, and Water Powers.

The Department of Colonization and Development

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J. S. DENNIS, CHIEF COMMISSIONER,
Department of Colonization and Development,
Canadian Pacific Railway Company.

Ask the Canadian Pacific about Canada



Agricultural and Industrial Progress in Canada

A monthly review of Agricultural and Industrial progress in Canada, published by the Department of Colonization and Development of the Canadian Pacific Railway at Montreal, Canada.

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MONTREAL

March, 1921

An Asset or a Liability

WINTER time in Canada has joys and advantages all its own. The pessimist does not agree with this statement. He complains that it is too cold, disagreeable and unhealthy; that it produces heavy coal and clothing bills, the prevalence of serious illnesses, and the interruption of traffic and general business.

Canada is a country not of one, but of many climates, with roses blooming at Christmas time on Vancouver Island, while Winnipeg, Montreal and Quebec are getting ready for their annual curling bonspiel. As a matter of fact, the climate of Canada constitutes one of its greatest advantages. Anyone who will take the trouble to glance at a map of the world will observe that Canada lies in the same latitude as the virile white races of Europe, and there can be no question that the climate of the northern temperate latitude is more favorable to the

development of healthy races than are the more southern climates. Vital statistics bear this out. Nowhere in the world will a healthier class of children be found than in Canada, and the state of health of the children is perhaps the best indication of the advantages of the climate. Canada's death rate per 1,000, for example, is lower than that of England, Germany, Hungary, Spain, Sweden, United States, Chili, etc.

If it were not for Canada's climate, we would not be producing the finest milling wheat in the world; the primest of beef cattle; the growing

output of lumber and furs; and the fine, vigorous race of young men and women that so cheerfully demonstrated, in the recent Armageddon, its ability to endure and accomplish.

Long summer days, with short growing season, put the quality in "No. 1 Northern"; bracing cold weather puts bone and muscle, fat and hide on horses and cattle; snow solves the lumberman's and fur trapper's transportation problem, while to the lover of outdoor sports, winter time is a season to be anticipated.

From the Canadian Rockies to the shores of Nova Scotia, the first snowfall is hailed with

delight. Lumbermen move into their winter camps and prepare to snake out logs; trappers and hunters look to the strings of their snowshoes; sleds and toboggans are brought from their summer resting places and enthusiastically overhauled; ski-ers dream of record jumps as they usher in winter with an initial run; and hockey players get down to training

for the strenuous games that put the Canadian "Falcons" into the premier place at the Antwerp Olympic championship contests last year.

The ramparts—Dufferin Terrace—at old Quebec take on a picturesque appearance little dreamed of in the days of Wolfe and Montcalm. Here, within a radius of 150 yards of the famous hostelry "Chateau Frontenac," skating, curling, ski-jumping and tobogganing hold sway. A kaleidoscopic array of colors and costumes puts the finishing touch to an infectious atmosphere of the joy of living. Those who know it not—

CANADA'S CLIMATE FROM COAST TO COAST

	Min. (1918)	Max.	Mean (15 years)	Sunshine (Mean)
British Columbia. (Victoria)	23.2	82.8	50.3	1822
Alberta (Edmonton)...	43.0	94.0	36.7	2081
Saskatchewan..... (Battleford)	46.0	98.0	34.4	2101
Manitoba (Winnipeg)...	36.9	94.1	34.9	2178
Ontario (Toronto).....	20.2	102.2	45.5	2048
Quebec (Montreal)....	24.5	91.6	38.7	1762
New Brunswick..... (Fredericton)	28.0	92.0	40.5	1978
Nova Scotia..... (Halifax)	12.6	86.7	44.3	....
Prince Edward Island.. (Charlottetown)	16.0	84.0	42.0	1896

Agricultural & Industrial Progress in Canada

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• Norman S. Rankin, Editor.

who annually go off suddering to Florida, California or Bermuda, whose experience yet lacks a taste of Canadian winters, will continue to be among the critics, but once having tried it, they find it good—and they come back.

They realize, as have others before them, that Canadian winters may well be added to the long list of this country's natural resources, and that Canadian winters are undoubtedly assets—and in capital letters.

General Agricultural Situation

*Compiled by J. Dougall, General Agricultural Agent,
C.P.R., Montreal.*

The comparative figures of the Dominion Bureau of Statistics covering the live stock situation in Canada make an interesting showing. Following are the totals in the Dominion for the years 1915, 1919 and 1920:

	1915	1919	1920
Horses.....	2,996,099	3,667,369	3,400,352
Milch Cows.....	2,666,846	3,548,437	3,530,238
Other Cattle.....	3,399,155	3,536,574	5,947,142
All Cattle.....	6,066,001	10,085,011	9,477,380
Sheep.....	2,038,662	3,421,958	3,720,783
Swine.....	3,111,900	4,040,070	3,516,678

There was a steady increase in the number of all classes of live stock from 1915 to 1919, when the peak was reached, but all classes excepting sheep show a marked decline between 1919 and 1920. Sheep increased by 298,825 between 1919 and 1920. Prince Edward Island is the only province to show an increase on all classes of live stock. British Columbia shows an increase in the number of horses of 353. Cattle show a decrease in all provinces, except Prince Edward Island. Sheep have increased in all provinces except Manitoba. Swine show a decrease in all provinces except Prince Edward Island. Poultry have increased in Prince Edward Island, Manitoba and British Columbia, and decreased in Nova Scotia, New Brunswick, Quebec, Ontario, Saskatchewan and Alberta.

Dairy Industry Popular

A glance at the figures presented will at once draw attention to the continued popularity of the dairy industry. The figures show that there is a decrease of only 18,199 over all Canada. The decrease was in New Brunswick, Quebec, Manitoba, Saskatchewan, and Alberta. An increase was shown in Prince Edward Island, Ontario, and British Columbia. The provinces

exhibiting decreases were all affected during the winter of 1918-1919 by shortage of fodder crops and high price of feed, and farmers were compelled to reduce their herds. On the whole, the Dominion has progressed, as the quality of the animals is undoubtedly better and the production of pounds of milk per head has increased. The dairy industry in Canada has a great future, and as silo crops are coming more and more into use the industry will continue to grow. The introduction of the Giant Russian sunflower into Western Canada, where corn cannot be grown, will without doubt add an impetus to this branch of live stock, as in the past in Alberta and Saskatchewan and in some years in Manitoba it was difficult to get enough silage, but sunflowers on present showing will solve the silage question in the West. There is no doubt but that dairying has a great future in Canada, and probably gives the farmer the most assured return, or at all events a continuous weekly or monthly cash revenue.

The beef cattle industry has shown considerable decline in numbers since 1918, due to shortage of pasture in Western Canada. Taking the world's consumption of beef into consideration, however, the future for beef cattle should be good, as on the whole there is a shortage of beef products.

Hog and Sheep Situation

The hog and bacon situation as shown by the figures given above is acute, as our hog population has decreased very rapidly and our supply is not nearly enough to give the packing industry its requirements. However, the future for this class of live stock is encouraging, as with the low price of coarse grain the farmer can better afford to feed grain for bacon than sell at a loss.

The sheep industry is fairly prosperous, and the population holds its own well. There is no doubt but that farmers will go into this class of stock, as the lamb market is good.

The Value of Irrigation Bonds

*By J. S. Dennis, Chief Commissioner, Dept. Colonization
and Development C.P.R., Montreal, Que.*

Irrigation is a live issue in Western Canada at the present time, the great successes of existing schemes having occasioned a general clamoring from adjacent areas which, for lack of the necessary moisture, are deprived of the abundant harvests the land is capable of producing with this assurance of moisture. If irrigation schemes could spring into being at will, tremendous areas, where farmers are confident of its accruing benefit, and are envious of their neighbors' harvests, would be benefited, but unfortunately the bringing to fruition of an irrigation project is a protracted and expensive undertaking, necessitating exhaustive engineering study and large capital expenditures.

Before a scheme can get under way and work commence on the surveys, and the excavating of canals and ditches, and the construction of dams, etc., bonds must be issued and sold to meet the large expenditures involved in the work. When the first irrigation schemes were undertaken in the West, they were carried out by large corporations, the largest of these being that of the Canadian Pacific Railway. At that time, there were but a few visionaries who could foresee the metamorphosis of the plains to be brought about by the application of water through irrigation, and who were able to convince others of the practicability of their ideas, but these schemes were generally regarded as Utopian and received with scepticism on every hand.

Unqualified Success of Irrigation

The corporations, of course, financed these schemes and took all the risks. The sale of irrigation bonds then would have been an impossibility in view of the manner in which the public regarded the idea of irrigation in Western Canada, and one can imagine the disinclination with which Canadian bankers would have considered them. For the same reason, one can comprehend the reluctance with which, after the projects were initiated, loan companies viewed requests to loan money on mortgage security on irrigable farms.

The trend of opinion was, perhaps, more or less justifiable in the unproven results from irrigation in Western Canada, but what is now incomprehensible is the tardiness with which this short-sighted viewpoint is passing away in the light of the unqualified success irrigation in Alberta has achieved, and the steady and urgent demand of farmers for its further extension.

Irrigation in Western Canada has transformed the face of the country, has won American championships for cereals and tubers grown on irrigated land, has caused crops to grow which were previously not adapted to the country, and made wealthy men of struggling farmers. Irrigation has increased the average yield of wheat 77 per cent., oats 54 per cent., barley 81 per cent., potatoes 250 per cent. Absolutely phenomenal yields have been secured on the irrigated farms of Alberta, and the years of successive and continued success stand as proof of the soundness of the whole idea.

The independence of the irrigation farmer of rainfall, and his assurance of an adequate supply of water for all purposes, forms the most complete crop insurance possible.

Loans to Irrigationists

The situation has changed in Canada categorically. Irrigation has proven itself, and made farms and their owners independent. Though dealing in bonds based on irrigated lands may be in the nature of a new venture to Canadian

bond dealers and loan companies, and they accordingly believe that this business calls for careful investigations and conservative treatment, they have the precedent of transactions south of the international boundary, especially in the states where, as in Alberta, large irrigation projects have proved their value in production and elevation in farm values. As far as mortgage loans are concerned, banks and loan companies in many of the Western States, when not disposed to loan money on dry-land farms, willingly do so on irrigable holdings, and their reports indicate that the percentage of loss on these loans is practically nil.

Since the initiation of irrigation in Western Canada, I am informed that a mortgage has never been foreclosed on an irrigated farm in Southern Alberta, and that in some of the irrigated districts it is now conceded that a full water right trebles the selling value of a farm. What better guarantee than this can be found behind any bond?

Irrigation bonds are a new kind of investment in Canada since the passing of the Alberta Irrigation Act made co-operative irrigation districts possible. The Dominion Government is the sole owner of water rights in the provinces of Saskatchewan and Alberta, and before a company, or individual, or body of farmers can proceed with an irrigation project, the Government must be satisfied of the feasibility of the scheme and the adequacy of the water available. Expert irrigation engineers of the Dominion Government determine this by survey.

The Irrigation Districts Act

Furthermore, to eliminate any possibility of loss to the bondholders, the Irrigation Districts Act, under which the project is evolved and operated, and the bonds issued, provides that the Alberta government create a fund for the district equal to two years' interest on the bonds to cover any arrears on the part of the ratepayers. The fund is perpetual during the period of the loan, but is limited at any time to the amount of two years' interest. Stringent action is provided for in the case of default, by which the trustees of the district proceed against the landowners to recover the amount due by means of tax sales of delinquent lands.

It is clear that the purchaser of Canadian irrigation bonds has security against loss by the farmers, who are fully assured of bigger and richer crops and the consequent increasing value of their farms, and the government of the Province, which stands behind them with an assurance against delinquency. Bonds are issued on the security of buildings, manufacturing concerns, railway undertakings, etc., and in every case, as in the case of any other mortgage, the persons loaning the money insist on having the property insured against fire and make no exception to the payment of insurance premiums.

Irrigation is an insurance on crop production and against drought, and annual water rental is simply the payment of the insurance premium, the paying of which results in certainty of a crop or returns from the land insured as compared with dry farming.

If bond buyers carefully investigate the advantages of Western Canadian irrigation bonds in the light of the success which has attended irrigation schemes in operation in Alberta now for some years, they will probably realize their high investment values.

The Hemp Industry in Canada

*By G. G. Ommanney, M.I.C.E., Investigation Engineer,
Dept. of Colonization and Development, C.P.R.,
Montreal, Que.*

In an article published in Volume 2, Number 1, issue of the Bulletin, January, 1920, we referred to the past history of the hemp cultivation in Canada, the experiments which had been carried out, and which, in their results, had satisfactorily established the suitability of western soil and climate both in Manitoba and Alberta for the cultivation of this important industrial crop. We also described the reasons which led to a temporary abandonment of effort to secure the production of raw material for Hessians in Canada.

One of the signs of this country's reconstructive recovery from war conditions and consequences is the revival of practical interest in this subject, as a consequence of which a big forward step has recently been taken in hemp cultivation in Manitoba.

This Year's Plans

Last year, the Canada Fibre Products Limited, under Col. Wm. Grassie, planted some 550 acres of hemp at Niverville near Winnipeg. This crop was fairly successful, but cultural methods were not all that could have been desired, and the yield was accordingly reported to be not as great or as uniform as might have otherwise been obtained. It is felt, however, that the lessons learnt have added greatly to knowledge on the subject and go far to ensure full success in future efforts. With a view to providing for an extensive hemp crop in Manitoba in 1921, arrangements were made for securing the seed from some 5,000 acres in Kentucky under an agreement for purchase on favorable terms for the benefit of the Manitoba farmer. Owing to existing conditions, money stringency, and adverse exchange rates it has been found advisable to curtail this programme, but nevertheless we are informed that arrangements have been completed to purchase some 750 bushels of this Kentucky seed sufficient to plant 1,000 acres in Manitoba, probably in the Swan river or Dauphin district.

Create an Industry

The Canada Fibre Products Limited have recently secured Mr. E. F. Hutchings, of the Great West Saddlery Co., as president, and intend to establish a mill to handle the product from this acreage. The manager of this company is quoted to have said, "Our ultimate object is to build up a hemp industry, with Winnipeg as its headquarters, which will produce bags, twine, and coarse fabrics. Actual planting will begin about the first of May."

It is thought probable that, with Mr. Hutchings as president, the company will adopt an aggressive campaign in regard to hemp development in the West. Of course, the ultimate purpose is to establish the industry as a combined agricultural and industrial Canadian development with plants throughout Western Canada, planting, cultivating and treating the hemp and converting it into all its various products, but it is understood that, for the present, attention will be restricted to perfecting methods of cultivation, and the product will be marketed as raw material in Eastern Canada and Europe.

As with all Western Canadian developments of this nature, the success of the enterprise depends largely on the possibility of substituting machinery for hand labor. The perfection of a practical hemp breaking machine has received a lot of attention from experts. It is understood that this machine is now satisfactory, and that a demonstration of its practical operation is to be given in Winnipeg in the near future. Although we have not, at time of writing, any definite information of this particular machine, there can be no doubt that such a machine is an imperative necessity for successfully handling the Canadian hemp crop.

Alfalfa in Southern Alberta

*By James Colley, Secretary Western Canada Irrigation,
Association, Calgary, Alberta.*

A native of the southwest of Asia, alfalfa, probably the best fodder crop grown, is now seen on farms in many parts of the world. From Asia, seed was taken to the countries bordering the Mediterranean Sea, and the plant was grown in Spain many centuries ago. The Spaniards are said to have introduced it into Mexico and South America in the sixteenth century, and its appearance in North America dates from about the middle of last century, when some seed was brought from Chile to San Francisco. Since its introduction into this half of the continent, now nearly seventy years ago, alfalfa has become the leading fodder crop of the western states, and by far the largest area of the irrigated lands of these states is used for the growing of this crop.

A very palatable and highly nutritive leguminous plant, all farm animals, especially cattle, sheep and hogs, thrive on alfalfa. It also adds greatly to the fertility of the soil on which it is grown, and increases the yield and quality of the crops that may be sown after it on the same land. This is due to its ability to draw large quantities of nitrogen from the air and to its long tap root, which has been known to grow to a length of fifteen feet and even

longer. Alfalfa is, therefore, used to great advantage in crop rotation, although, if desired, a field once sown will yield large crops of hay for many years.

Conditions Conducive to Success

Thriving well, as it does, in a semi-arid climate where there is abundant sunshine and a high summer temperature, and reaching its highest perfection in such climates under irrigation, alfalfa quite naturally was introduced into Southern Alberta, whose climate possesses these advantages, when the great streams rising in the Rocky Mountains were made available for watering the immense areas of land by the construction of irrigation systems.

Most of the alfalfa produced in Southern Alberta at present is grown in the country surrounding the town of Coaldale, which lies about eight miles east of the city of Lethbridge. From small beginnings about fifteen years ago, the acreage sown to this crop has been increased steadily year by year, until in 1919 it had reached nearly twelve thousand acres, and in 1920, 13,534 acres.

The value of the alfalfa harvest in this district has been second only to the value of the wheat crop, but alfalfa is steadily gaining ground. In 1919 the crop was worth \$1,218,840. This figure was exceptionally high and was due to two reasons—a heavy yield and the prevailing high prices owing to a shortage of fodder elsewhere. The value of the alfalfa harvested on 11,608 acres of land was only \$200,000 less than the value of the wheat grown on 32,640 acres of similar land. And the wheat crop was not a poor one, for the yield averaged twenty bushels to the acre. The average yield of alfalfa was three and a half tons to the acre, and it was sold at prices ranging from twenty-five to more than thirty dollars a ton.

1920 Crop Worth \$800,000

In 1920 the alfalfa acreage was somewhat larger, but the value of the crop was lower than that of the previous season, an estimate placing it at \$818,807. A drop in price, caused by an abundance of hay and fodder of all kinds, is mainly responsible for the difference in value in this and last year's crop. The average yield was also slightly smaller in 1920 than in 1919, but this difference was not important.

Of this year's alfalfa, hay farmers have still large quantities in their fields of which they are unable to dispose immediately. This situation should prove to be a blessing in disguise, however, for it will eventually necessitate live stock being brought into the district for fattening purposes, and may lead also to the creation of a large dairying industry. The ideal of an irrigation farmer is to keep the forage crops on his farm on which they are grown, feeding them to live stock and sending out only such products as butter, cheese and meats. In this way valuable fertilizing elements are retained on the farm, and a system of agriculture excelling all others in profitability and permanency can be built up and maintained. But this ideal could never be reached so long as alfalfa growers were able to sell their hay at prices bringing them returns of upwards of a hundred dollars an acre on land which only a few years ago they acquired for half this sum, since the large profits they were making gave the farmers no incentive to go into the live stock business.

13,000 Acres in Alfalfa

There is much that might be added about the value of alfalfa for increasing the yields of other crops following it on the same lands, of its worth as a permanent crop, and of the kinds of alfalfa suitable to Western Canada, but the scope of this article will not permit any enlargement of these points. It is certain that alfalfa is destined to play an important part in the system of agriculture on the irrigated farms of Southern Alberta.

As yet these vast irrigable areas are only in the early stages of development, and it takes time to bring such areas to full fruition. Settlers have to be brought in. Many of them possess little capital to begin with, and are obliged, therefore, to employ methods that bring quick

rather than more lasting returns. Then there is the question of seed. Good alfalfa seed, suitable to conditions in Southern Alberta, is scarce and expensive. The Canadian Pacific Railway is trying to overcome this difficulty by growing seed on its demonstration farms and selling it at a reasonable figure to farmers.

But the results obtained on a comparatively small area of irrigable land near Lethbridge, where out of 71,000 acres more than 13,000 acres are already in alfalfa, are significant. When the large irrigation block operated by the Canadian Pacific Railway east of Calgary, which alone contains 600,000 acres of irrigable land, reaches the same stage of development as the district farther south, it will have nearly 100,000 acres in alfalfa. Besides, there are other irrigation systems partly in operation and partly under construction, and contemplated schemes that will add another three-quarters of a million acres to the irrigable area of Southern Alberta. All this vast area is equally suited to the growing of alfalfa.

It is likely that, in a few years, a million and a half acres of land will be under irrigation in Southern Alberta, and the growth of alfalfa on this land in rotation with other crops will make this part of Canada one of the best cattle finishing and dairying areas in the world.

A Sheep Romance

Following up the tale of a cattle path to fortune, a sheep story should be in order as exhibiting that the roads to independent wealth in Western Canada are many and diversified. One man goes in for cattle, another specializes in sheep, another grows only grain, and still another distributes his eggs and indulges simultaneously in all three. The results appear to be the same, and if the follower of one line is richer than another it is in that superfluity of wealth beyond human needs. The story that follows might truthfully be called a sheep romance.

John T. Heninger is a large sheep owner in Southern Alberta, and on his three large ranches, known as the Coulee Ranch, King's Lake Ranch, and Hay Lake Ranch, located southeast of Lethbridge, he has clearly demonstrated what can be done by personal application and assiduity coupled with Alberta climate and fodder. Mr. Heninger made a most insignificant beginning, the early chapters of his life history having much in common with the modest commencements which have developed into ranching fortunes in the west. But sheep have a way of increasing, and the size of the herd, which at the present time ranges the hills and coulees of the three ranches, may be estimated from the fact that last spring it was increased by the addition of seven thousand lambs, and that the wool clip harvested amounted to about 135,000 pounds.

The Blighty Wagon

All sheep breeders and farmers know that there is a tremendous mortality among lambs in the first few hours of their existence, and this rancher's motto has been, "Save the lambs and the sheep will take care of themselves." Upon this policy he has built up the herd he now owns. A visitor to the ranches in the spring time might be somewhat startled to see an ambulance's mad antics as it pursues a rough and

furious way over hill and down coulee. An ambulance in the undiluted "wild and woolly" is a somewhat unusual spectacle, but this same "blightly wagon," as soldiers were wont to call it, has saved the lives of hundreds of lambs each season.

The ambulance is mounted on a Ford truck, and the interior is fitted out with ten pens, five on each side. It rambles over the countryside at lambing time and, picking up the ewes with new-born lambs, journeys with them in the snug little pens to the sheltering fold. Here the couples are placed in other comfortable pens, the ewe fed on oats and hay, and the lamb, if found to be cold, placed between blankets. Then, when the sun comes out and the lamb has recuperated a little strength, the ewe and its woolly offspring are turned out to graze upon the fresh rich grass of the adjacent pastures. When lambs are being born too quickly to be all accommodated by the motor ambulance, horse-drawn ranch vehicles are pressed into service. Just what value this system of ensuring the life of the lamb is to the rancher may be judged from the fact that in stormy springs, when other sheep ranchers have had a heavy toll of their newly born lambs, Mr. Heninger claims to have come through without the loss of a single animal.

The ranch houses are in tune with the progressive modernity of the ranch methods, all buildings, both for the rancher's family and his helpers, being electrically heated and supplied with running water furnished by a storage cistern. Wealth is to be found along many roads in Western Canada, and Mr. Hensinger has found the sheep road.

Industrial Outlook in Western Canada

By John Sweeting, Industrial Agent, C.P.R., Winnipeg.

The month of February is bringing with it a distinctly brighter outlook in Western development. Conventions of business men which have been held in Winnipeg and other Western points show a determination to meet existing conditions by a re-arrangement of prices more on the level with public requirements. At the same time the feeling has pervaded each convention that the future is deserving of optimistic consideration rather than any suggestion of possible deterrent factors. The Retail Lumbermen, the Builders' Association, the B.C. Fruit Growers and other organizations interested in the various active production work of the West, appear to have faced existing conditions with equanimity and are desirous only of finding a proper solution for the continuation of good business and the care of unemployment.

While the Western construction programme may at the moment be looked upon as tentative, yet the necessity for accommodation of all kinds will be the prime factor in reaching a decision

immediately the spring opens up and active operations can be carried on. There appears to be little doubt that actual construction work on the prairies this year will greatly exceed the total of 1920, even although, as seems at present, the actual reduction in the price of all building materials in the aggregate will not be very large. There are, however, many possibilities in this relation, and the situation, to say the least, is quite hopeful.

Extension of Trading

There is a noticeable increase in enquiries from United States sources as to Western industrial expansion, while from Great Britain and also continental points many enquiries are coming through looking to the extension of trading with Canada. There is likely to be great activity in prospecting work of all kinds, the gold, silver and copper areas of Manitoba have attracted a large amount of interest, and are due for greater development this year than has hitherto been the case. The active work on the part of the Imperial Oil Co. and other organizations in drilling for oil will undoubtedly increase, with possibilities of very interesting developments.

Agriculturally, there is a large area of land in all the provinces ready for seeding, and with the usual amount of spring plowing the crop situation should be well above normal. On the coast the outlook among the pulp and paper mills is quite good, and with one or two new organizations beginning operations the output will show an increase. The general opinion in the British Columbia lumber trade appears to be optimistic for a good season's business, and mills and other plants which have been closed are already opening up in preparation for renewed activity. There is promise of large immigration, which in itself brings a very considerable amount of new business to the country.

Reviewing the Western situation as a whole, one cannot help feeling satisfied that the outlook justifies a spirit of optimism; the West has come through a somewhat difficult period with credit and is taking its courage in both hands; this spirit will be the foundation of continued success.

A Tribute from "Leslie's Weekly"

An address of more than usual interest to Canadians was that given recently before the Canadian Club of Montreal, by Dr. C. A. Eaton, editor of *Leslie's Weekly*.

The Rev. Dr. Eaton, who is described by the *Toronto Globe* as "a scholar, a thinker and a man of broad human sympathies," is by training and experience well informed on world conditions. Beginning to preach at 18 years of age, he has successively been pastor of many churches

in the United States and Canada, governor of universities, writer, traveller, lecturer and author.

His speech was both humorous and informative, as the following extracts will indicate:

"Now, what I want to say to you Canadian men is this. You have an immense empty country to fill up. Now that the war is over you have found what resources of manhood you have. You want to get rich quick and grow up to a great population, a great populous country. Gentlemen, for God's sake, go slow; go slow. What a great calamity it would be when some national crisis falls on this dear land if you find that all your people are not of one mind and one spirit—if you have not got one soul in every part of this nation! Go slow. You had better improve the quality of your labor than increase its quantity. It is better to have one thoroughbred than a hundred mongrels. Pick your immigrants; pick them at the source, pick men and women of character, industry and thrift, men and women who are of your mind and of your ideals, and don't permit an influx of those lunatics who believe, for instance, that Lenine has ushered in the reign of God.

"Only have men and women come who are capable, first of all of standing the winters, and secondly of becoming Canadians.

"A great movement has set in in the United States in this respect. The thing I am anxious to see is this: to have Canada take something out of the experience of the United States. We are about one generation ahead of you. When we had great quantities of empty land we thought we could absorb any amount of alien peoples, whether of American ideals or not, and that land was a great deodorizer and developer of national spirit.

Industry Chief Argument of Civilization

"You have great quantities of the best land in the world still available, and to that extent you can take care of a huge immigration; but, gentlemen, as we are passing from agricultural domination to industrial domination, don't flood your cities with slums and half-nourished men and women.

"When the United States had three million people she had more great men in literature, art, science, religion, and, especially, politics than she has to-day with a hundred and three million people. Greatness has no relation to physical magnitude; it is the soul, the spirit of the individual, his moral resources; and surely Canada can measure with any nation on these ideals.

"Now I come to the close of what I have to say. At different periods in the world's history, civilization chooses some one great organ for its development. There was a time when war was the chief instrument, when the Roman Eagle carried Roman civilization through the then world. In the Middle Ages religion was the sole argument. In the last century science was probably the chief burden-bearer.

"We have come to a new age when Industry is the chief argument of civilization. You have in this country at the present time some remarkable conditions—I don't know whether you realize them or not: in 1914 the manufactured output of this country amounted to thirteen per cent., and the agricultural output fifty-seven per cent. In 1919, five years later, your manufactured exports amounted to forty-five per cent. and your agricultural exports to twenty-two per cent. In these five years Canada changed from an agricultural to an industrial civilization, and it is the same in the United States.*

*Note—Dr. Eaton's figures regarding the value of agricultural and manufactured exports for the year 1914 are correct, as are his figures for manufactured exports for 1919; but in figuring the total agricultural exports for this latter year, he apparently failed to take into account the value of "animals and their produce," as he did in compiling the 1914 figures. Including them, the percentage of total agricultural exports for 1919 should be 44%, not 22% as stated in his article. There is no doubt that the showing made by the manufacturing industries during the period 1914-1919 was due to war conditions.

"What are we going to do with our Industry, or it with us? Well, I am thoroughly convinced that we can make industry a servant of civilization if we put into it some brains, character and wisdom, the same as we have put into our other occupations in days gone by, but we must remember that unless we take hold of the problem and give the best in us to it, it will get away from us.

Great Wealth per Capita

"You have no idea how large Canada is. I come here occasionally, and people say, 'You come from a rich country.' Nothing doing; this is the richest country in the world. You have a national wealth of over sixteen billion dollars. You have an annual income of two and a half billions. Your agriculture will produce this year over two billion dollars. You have the greatest wealth per capita of any nation in the world. Do you realize that you have the greatest undeveloped resources of any nation? Canada, since her birth, has done more with her population, as compared with others, than any nation has ever done since the dawn of time. You have the greatest system of canals and interior waterways. You have one of the best banking systems. You have the most tremendous agricultural development a similar population ever got in sight of. You have developed a commerce and an industry that is amazing, measured by your population. The American throws out his chest and waves his flag, but the Canadian is the man who can do that and have something to stand on while he does it.

"What I ask you Canadians to believe is that your nation and the United States, side by side, have been given by God Almighty the greatest heritage ever given to a people and a great outstanding, forward-looking civilization.

"You here have come, as we have come, to the great test. Now the question is, shall we turn our backs on the ideal that has come to us from out of the Anglo-Saxon civilization of a thousand years to take up something else? My answer is 'No, we must go on as God began us three hundred years ago; we must go forward and develop those great ideals.'

"A nation cannot be autocratic in industry and democratic in politics; you must have one or the other. The time has come to test out your democratic principles in your schools, your churches, your banks, your industries. I have no fear of freedom; I have only fear of slavery. I have no fear of putting responsibility on men; I believe that responsibility will develop their undeveloped resources and set them free. I ask my fellow-citizens, here and in the United States, to believe in their principles and turn deaf ears to socialism and all other such isms and get down to brass tacks and remember that you can get no result without a cost equal to it; that you cannot get the result of work unless you work; that you cannot work by proxy—you have to sweat.

Canada, Second Best Customer of U.S.

"Canada is the largest customer, next to Great Britain, that the United States has; our ideals of civilization are one.

"We have our differences; there are always differences in well-ordered families; we are very opinionative; we will give up anything but our prejudices—those we hold sacred—but we understand each other. Canada and the United States have lived side by side for over a hundred years in perfect amity, and we will continue to live so. Not because there is not difference of opinion and clashing of interest every day, but we have the same soul, the same moral standard, and when we have fought the thing through and come to a conclusion, we are good sports enough to accept the decision and live up to it.

"I am not saying this as a partisan or a politician, but as an observer of the processes and objectives of civilization. I believe it is the sacred duty of every man. I believe it is the sacred duty of every man to go back to his industry and make it the servant of this forward movement which we call civilization. It is your duty to take

your political parties and reconstruct them in terms of this larger civilization. The process will not start until every man and woman has his or her chance. We are only beginning, so don't try to do it all at once. Let each one in kindness remember that the other fellow is human also; let us all put our hands to this task and smile when the clouds are dark and when the winds blow. Let us give our allegiance to the task, all that is in us, because we are working out the processes of God. Let us take from other civilizations and other nations the best they have and give back the best we have, so that working in our little generation, let us each go to our task with faith in ourselves, faith in our civilization and faith in God, and when eventide comes, having done a square day's work in a square man's way, it will bring light to us, and there can be no blessing fall on you in this dear land of my birth too beautiful to satisfy me, who think of Canada so often as the home land."

Canadian Toy Industry

What promises to develop into a new industry of importance in Canada is the manufacture of toys. In a normal year it requires considerably more than a million dollars' worth of toys at manufacturers' prices to satisfy the demands of the Canadian market. Before the war the larger part of these came from Germany and Austria, but with the opening of hostilities the export ceased, German-made playthings were banished from the nurseries, and Canadian children faced somewhat of a shortage in cheap toys. Many eyes were, however, open to the opportunity offered, and to-day the manufacture of toys is an industry which has got away to a successful start, and under government encouragement promises to assume great prominence among Canadian manufactures, and partially if not wholly supplant the product of other countries upon the home market.

To determine the status of the industry and to encourage the utilization of waste wood material in this way by Canadian manufacturers, a conference and fair was held recently in Toronto under the auspices of the Department of Trade and Commerce, which disclosed in a surprising manner the healthy progress of the toy industry in the years since its inception. Through engaging the co-operation of Montreal and Toronto dealers in toys, it was possible to gather together about 20,000 articles of Canadian manufacture, the contribution of forty-nine exhibitors. This was considered most gratifying for an industry but recently incepted and lacking as yet efficient organization.

Canadian Toy Association

At the conclusion of the toy fair, a Canadian Toy Association was formed and a committee

elected. Among the many important resolutions was a decision to mark all Canadian manufactured toy goods uniformly with a maple leaf and the words "Made in Canada." A meeting of women's organizations at the same time drew up several resolutions for the encouragement of the purchase of Canadian made toys among Canadian women by drawing their attention to the manufacture.

One very gratifying feature of the fair was that buyers of many wholesale houses and departmental stores placed orders for thousands of dollars' worth of Canadian toys, a number of exhibitors receiving orders enough to keep them busy throughout the year. Some, indeed, were obliged to refuse orders on account of financial resources or limitation of staff.

Home Market a Million Dollars

In the question of the manufacture of Canadian toys, the home market is an important factor. In the fiscal year 1914, which ended four months before the outbreak of the war, the total value of toys imported into Canada was \$1,037,000, of which about \$580,000 worth came from Germany, and \$5,600 from Austria. In that year, Canada imported from the United States toys to the value of over \$293,000; from the United Kingdom, \$91,000; from France, \$33,000; from Japan, \$26,000; and small quantities from Holland, Belgium, Switzerland, Italy and China. Canadian production at that time was practically nil, but the success of manufacture since that date, with the high excellence of the product and the favorable prices at which it can be turned out, promises to eliminate

the foreign market and to supply the Canadian market which, conservatively, at the present time, amounts to over a million dollars a year.

It is interesting to Canadians to know that the manufacture of toys is rapidly becoming an important industry in the United States, because the general feeling is that what can be done across the border can be done in Canada, the labor conditions of the two countries being much the same, with Canada probably having the advantage as regards supplies of raw materials. In the future, the waste products of the lumber camps and the woods products factories will not be consigned to the ever burning incinerator, but will be increasingly used for the manufacture of toys to put an all-Canadian product into the homes of Canadian children.



Industrial Canada

Farms, forests, furs—in these three great revenue-producing assets might pithily be summed up the general conception of Canada's place in the economic cosmos as regarded by the vast sections of uninformed outside of the Dominion. In the picturization of a land of conditions still approximating the natural and primitive it is perhaps difficult, away from the Dominion, to form an adequate conception of assets of natural wealth beyond those emanating immediately from the exploitation of natural resources. The farms and ranches, the forests, the regions which have harbored the fur-bearers, have undeniably been to the fore in furthering national progress, but those phases of activity incidental to settlement and natural exploitation have not been neglected. Though they have perhaps suffered in publicity from the prominence agriculture has assumed, observation shows that industrial expansion has gone hand in hand with the development in its primal stages of the natural wealth of the Dominion.

Industrial growth in Canada has not been less phenomenal than that of agriculture. As settlement has progressed and farmers, drawn from all parts of the globe, have encroached on the virgin expanses, towns and cities have sprung up in their wake and have harbored industries in increasing numbers and importance, as agricultural settlement became denser and more extensive. The same expansion was evident in localities where mineral deposits were exploited, in those areas where timber was cut for lumber and paper, where the sea and inland fisheries had their centres. It covered every section of the Dominion where men sought to bring into utilization the tremendous natural wealth.

Statistics of Manufacturing Industries

Statistics of manufacturing industries, in view of the time taken to compile them and the continual expansion of activities, must at all times be somewhat out of date, and the latest published survey of Canada's industries carried out by the Dominion Bureau of Statistics covers only the period up to the end of 1918. Since that time there has been a considerable development, the period subsequent to the war having seen the establishment of hundreds of United States industries induced to this foreign expansion by the adverse exchange on Canadian money. The figures are, however, useful for purposes of comparison, as illustrating industrial growth over the years prior to that time.

At the end of December, 1918, there were in Canada 35,797 manufacturing establishments in comparison with 15,796 existing in 1905, and 21,306 in 1915. The capital invested in these industries in 1918 aggregated \$3,034,303,915 compared with \$846,585,023 in 1905, and \$1,994,103,272 in 1915. The number of employ-

ees engaged had risen from 392,530 in 1905 and 514,883 in 1915 to 677,787 in 1918. The output of all factories at the last survey was valued at \$3,458,036,975, whilst in 1915 it was \$1,407,137,140 and in 1905 only \$718,352,603. Over the previous year, 1917, there was an increase during the twelve months of \$247,652,000 in the capital investment, an increase of \$66,798,000 in the wages paid, and an increase of \$442,459,035 in the value of products.

Ontario led in the number of manufacturing plants with 15,365 to her credit; Quebec came next with 10,540; then in order Nova Scotia, 2,125; British Columbia, 1,786; Manitoba, 1,444; Saskatchewan, 1,422; New Brunswick, 1,364; Alberta, 1,252; Prince Edward Island, 484; and the Yukon, 15.

In the matter of capital investment, Ontario also led with a total of \$1,508,011,000 or nearly one half of the aggregate. Investment in the other provinces was as follows: Quebec, \$860,468,786; British Columbia, \$244,697,241; Nova Scotia, \$133,262,649; Manitoba, \$105,983,159; Alberta, \$61,405,933; New Brunswick, \$74,470,879; Saskatchewan, \$39,476,260; Prince Edward Island, \$2,886,662; and the Yukon, \$3,638,929.

Ontario Leading Manufacturing Centre

During 1918, considerably more than fifty per cent of the product of these manufacturing plants was credited to Ontario, which led the Dominion with \$1,809,067,000, this amount being nearly double that of the next province, Quebec, which produced goods to the value of \$920,621,171. British Columbia came third with \$216,175,517; Nova Scotia next with \$160,409,890; then Manitoba, \$145,031,510; Alberta, \$82,434,422; New Brunswick, \$68,333,069; Saskatchewan, \$50,009,000; Prince Edward Island, \$5,693,879; and the Yukon, \$260,882.

The employees, numbering 677,787, were distributed as follows: Ontario, 333,936; Quebec, 207,513; British Columbia, 44,039; Nova Scotia, 29,036; Manitoba, 23,388; Alberta, 9,894; New Brunswick, 9,888; Saskatchewan, 8,066; Prince Edward Island, 1,467; and the Yukon, 61. The wages and salaries paid out by provinces were: Ontario, \$321,160,214; Quebec, \$175,799,975; British Columbia, \$50,422,153; Nova Scotia, \$24,814,228; Manitoba, \$23,389,681; New Brunswick, \$14,247,388; Alberta, \$10,249,465; Saskatchewan, \$8,496,172; Prince Edward Island, \$777,067; and the Yukon, \$104,509.

Agriculture and the products of the land stand pre-eminently at the head of Canadian industries, and in the survey for 1918 we find flour and grist mill products leading the list of individual manufactures with a production of \$262,537,122, and butter and cheese in the seventh place with a production value of \$94,927,032. Slaughtering and meat packing comes second with \$229,231,666, and the products of

rolling mills and steel furnaces third with \$209,706,319. The year 1918 was the one of greatest war activity, and munitions, since practically eliminated from industrial activity in the Dominion, took fourth place with \$186,034,920. Lumber, lath, and shingles follows with \$146,333,192.

Development of Pulp and Paper

Whilst the majority of industries on the list under survey still, in all probability, maintain the same respective positions in order of importance, the pulp and paper industry, which is listed sixth, has jumped much nearer to the top with the remarkable development of the past two years. The year 1919 saw an increase in production of more than twenty and a half million dollars, whilst in all probability statistics, when published, will show that growth was even greater in 1920, a year which saw expansion which the production of future years will reflect.

After the pulp and paper industry come the following industries in order of importance: butter and cheese, foundry and machine shop products, shipbuilding and repairs, cottons, cars and car works, smelting, housebuilding, refined sugar, electric light and power, boots and shoes, hosiery and knit goods, plumbing and tin-smithing, car repairs, drugs and chemicals, tobaccos, etc., agricultural implements, preserved fish, leather goods, men's and women's clothing, printing and publishing, electrical apparatus and supplies, boilers and engines, and lumber products.

The growth of industrial activity in Canada is a story of progress, rapid and maintained, consistently following the development of agricultural settlement, and marching hand in hand with increased production from natural resources. In the still more brilliant future which awaits the Dominion from the more adequate exploitation of her natural wealth tremendous industrial expansion is presaged.

The Water Powers of Alberta

*Compiled by J. T. Johnson, Asst. Director,
Dominion Water Power Branch*

The province of Alberta is peculiarly fortunate in having within its boundaries vast coal reserves and important water powers. If the investigation and exploitation of these two resources are properly co-ordinated, there need be no doubt about the fuel and power needs of the province, as well as of large areas of contiguous territory, being properly met. Owing to the nature, extent and location of the known coal areas, many important water power sites in the province are for the moment not of immediate economic importance, so far as the development of power is concerned. It is inevitable, however, that with the increased cost of coal production, transportation and labor difficulties, etc., and with advances

in the art of the development, transmission and use of hydro-electric energy, most of the water powers of the province will in time prove to be important factors in the fuel power problems of the West.

Engineers of Dominion Water Powers Branch co-operating with the Reclamation Branch, both of the Department of the Interior, have examined, measured, and determined the power possibilities of all the important rivers in the province, with special attention to those adjacent to settled areas. To quote only one result of this work, it has been proved by storage and regulation that it should be possible to develop a sufficient horse power on Bow River to take care of a population of 300,000 people—a situation directly and happily affecting the future of the city of Calgary.

Detail power and storage investigation have been made on the Elbow, Red Deer, Saskatchewan, Peace and Athabaska Rivers, while much data relative to the smaller streams have been collected.

The water powers of the province of Alberta are administered under regulations of the Dominion Water Power Act, 1919. These regulations provide for the exploitation of the water power resources in a way which will ensure the power needs of the province being met to the best advantage in the public interest, under full Government control of rates, rentals, etc. Concessions are only made for limited periods to bona-fide applicants capable of prosecuting the development to a successful issue.

Application for water power privileges in Alberta should be made to the Director of Water Power, Department of the Interior, Ottawa.

Water Resources Inventory

In order that the power data for the province might be readily available for use whenever required, the complete information available to date has been collated in the "Water Resources Index-Inventory" by the Water Power Branch.

The great variation between maximum and minimum run-off of the rivers in Alberta is due to the geological and topographical features of the province, and to the temperature ranges. The waters of the southern and central portions of Alberta are collected by the North and South Saskatchewan Rivers and carried eastward to Lake Winnipeg, and thence by the Nelson River to Hudson's Bay; while those of the northern portion are collected by the Peace and Athabaska Rivers and carried to the McKenzie river, and thence to the Arctic Ocean. These rivers, together with many of their upper tributaries, have their source in the eastern slopes of the Rocky Mountains, and are fed from the glaciers and melted snows. As a result, floods occur during the summer months, while in the winter the flow is much reduced. Throughout the open prairie section, there is little inflow into the river systems during the winter seasons. The variation between the high and low discharges is accordingly very great, and creation of storage to regulate this condition must be given full consideration in any proposed development.

Developed Water Power

The water power developments in Alberta are situated almost entirely on the Bow River, the total turbine installation being 32,900 h.p. Of this amount, 31,600 h.p. is installed in the two power plants of the Calgary Power Company on the Bow River at Horseshoe and Kananaskis Falls, and 780 h.p. is installed in the plant of the Calgary Water Power Company on the Bow River at Calgary. The municipality of Lacombe have 200 h.p. installed in their power plant on the Blindman River, and the Canadian Pacific Railway have 300 h.p. installed in their plant on Louise Creek near Lake Louise. Three small grist mills west of Red Deer develop on an average about 10 h.p. each.

Summary of Developed Water Power in Alberta.

River	Index No.	Site	Company or Owner	Turbine h.p. installed
Bow.....	5BE1	Kananaskis Falls.....	Cal. Pr. Co...	11,600
Bow.....	5BE2	Horseshoe Falls.....	" " "	20,000
Bow.....	5BH1	Calgary.....	Cal.W.Pr.Co.	780
Blindman.....	5CC1	Blackfalds.....	Municipality of Lacombe	200
Lake Louise Creek.	5BA1	Lake Louise.....	C.P.R.....	300
Medicine River....	5CC2	Eckville.....	Karl More...	5
Medicine River....	5CC3	Eckville.....	Fritz Kinna..	20
Prairie Creek.....	5DB1	Strachan.....	G. L. Gabler.	3
Total.....				32,908

Power sites of the Bow River and the Rocky Rapids of North Saskatchewan, as well as those created by the great dams of the Canadian Pacific Railway irrigation system (notably that at Bassano), lie close to existing railroads, and in the north railways recently taken over by active and aggressive management are being improved, so that within the not distant future many of the larger power sites of that part of the province will be brought within transmission distance of settled centres of population.

Undeveloped Water Power

Investigations of the Bow, Elbow, Red Deer, North Saskatchewan, Peace and Athabaska Rivers and numerous other streams disclose the following estimated possibilities of development.

Summary of Undeveloped Water Power in Alberta.

This represents the estimated total power at sites concerning which some definite data is available.

RIVER	Horse power at 80% efficiency Estimated minimum development
Athabaska.....	97,795
Bow.....	14,852
Brazeau.....	2,360
Cascade.....	818
Castle.....	1,134
Clearwater.....	3,925
Crowsnest.....	276
Elbow.....	3,400
Oldman.....	478
Peace.....	19,000
Red Deer.....	1,616
North Saskatchewan.....	4,700
Spray.....	1,532
Slave.....	313,500
Snake Indian (Stony).....	680
Sturgeon.....	68
Total.....	466,134

To sum up, it might be stated that Alberta is well endowed with water power resources whose development will eventually be of vast benefit to the industrial and commercial, as well as to the domestic life of the province. The locations of these undeveloped powers in respect to the present centres of population, are in some cases favorable to their early development. Each power site or prospect requires, however, individual consideration of all circumstances and conditions pertinent to its development before its economic value to the community can be definitely decided upon.

The Domestic Fur Industry

The early history of Canada is contained in the chronicles of the fur trade. It was the knowledge of the country's unsurpassed possession of fine pelts which first induced exploration and later settlement. For years the entire population was in some manner or other connected with trapping or trading in furs, and the money accruing from the many enterprises was practically the country's entire source of revenue. Settlement upon Canada's fertile lands and the subduing of the land to cultivation gradually drove many of the valuable fur-bearers to the north or into those regions which, from their unsuitability to agriculture, retained without change their natural state. The fur trade became subservient to agriculture, and, with the extensive settlement which the past decades have witnessed, the border line of the profitable trapping area has travelled farther and farther north.

Then, with the country facing an ultimate issue which approximated fur depletion, and with the prevalent demand for more furs, interest was aroused in the possibility of raising fur-bearing animals in captivity. Originating in Prince Edward Island with foxes, widespread attention came to be centred upon the industry when it had successfully passed the experimental stages, and came to cover the Dominion in its following and to include many different fur-bearers tending towards depletion. As demand increased and prices rose, more and more ranches were established, and though relatively a subservient industry, it is yearly attaining more important proportions and aiding in no small manner to bring back to Canada its pristine prominence as the world's fur centre.

The First Accurate Survey

The first accurate survey of the industry in Canada has been carried out by the Dominion Bureau of Statistics, covering the year 1919, and this shows fur farming in the Dominion to be worth \$3,968,591, comprising \$879,668, the value of lands and pens, and \$3,088,923, the value of the fur-bearing animals. Altogether there were, in 1919, 414 fox farms in operation, including 249 in Prince Edward Island, 48 in Nova Scotia, 21 in New Brunswick, 52 in Quebec, 10 in Ontario, 1 in Manitoba, 1 in Saskatchewan, 11 in Alberta, 8 in British Columbia, and 13 in the Yukon. There are also three mink farms in Nova Scotia, and two small raccoon farms in Quebec.

The number of foxes on these farms at the end of December, 1919, was 6,433, with a total value of \$3,013,115. Patch or cross foxes numbered 831, valued at \$75,458, and red foxes 255, valued at \$10,295. Of the total number of silver foxes, Prince Edward Island possessed 4,704, Nova Scotia 361, New Brunswick 472, Quebec 318, Ontario 120, the Prairie Provinces

280, British Columbia 65, and the Yukon 113. Silver foxes born on farms in 1919 numbered 4,877, patch or cross foxes 495, red foxes 162, mink 40, and raccoons 2.

Over 2,000 Silver Fox Pelts

A total of 2,028 silver fox pelts of the value of \$482,364 were sold from fur farms in 1919, distributed by provinces as follows: Prince Edward Island 1,570, value \$369,194; Nova Scotia 113, value \$28,543; New Brunswick 103, value \$23,155; Quebec 84, value \$30,525; Ontario 44, value \$6,417; Manitoba, Saskatchewan and Alberta 63, value \$13,180; British Columbia 8, value \$1,330; and the Yukon 43, value \$10,020. There were also sold from fur farms 305 patch or cross fox pelts, value \$20,914; 156 red fox pelts, value \$4,156; one blue fox pelt, value \$65; 56 mink pelts, value \$1,030; and 2 raccoon, value \$30. In all, during the year 1919, the number of pelts sold by Canadian fur farms was 2,548, a value of \$508,549.

As this is the first survey of the industry conducted by the Government, it is not possible to give comparative figures, but it is clear to anyone in touch with the situation that the industry, of but recent initiation, has made rapid strides in the past few years. Since these figures were compiled, for instance, the Government has given permission for the establishment of many beaver ranches, whilst interest has been devoted to the muskrat and skunk as animals feasible of domestic rearing.

Across Canada—Winnipeg

Perhaps no city of the entire globe has attained greater or more rapid world prominence than Winnipeg, which is indisputably to-day one of the potentially greatest cities of the American continent. Winnipeg is the capital of the province of Manitoba, but this thriving hub of agriculture and industry stands for much more in Canadian economic life. Situated almost midway between Atlantic and Pacific, and only sixty miles from the United States boundary, it is the logical centre of the great Dominion, the division of East from West, and the gateway to the vast storage houses of the three prairie provinces and the ultramontane territory of British Columbia.

Winnipeg has a not insignificant place in Canadian history, and its transition from prairie to the trading post of Fort Garry, and to the splendid modern city at present standing at the juncture of the Red and Assiniboine Rivers, has been both romantic and sensational. The site of the future city saw the arrival in 1812 of Lord Selkirk with his sturdy band of pioneer settlers; as a village it passed through many harassing and retarding vicissitudes consequent upon the factions of the great trading companies, and

figured prominently in the Riel rebellion. It was incorporated as a city in 1873, and saw a period in its progressive youth when lots on its Main Street were selling for more than land on Michigan Boulevard, Chicago.

The Chicago of Canada

Winnipeg has, in fact, so many features of its growth and development in common with the middle-west American city, that it is popularly termed the Chicago of Canada. A city systematically planned from its earliest days with a view to combined beauty and utility, it is harmoniously laid out on the prairie at the converging of the two rivers, and grows yearly in the same orderly manner. With wide, spacious, cleanly thoroughfares flanked by tall, handsome public buildings and utilities, it has not neglected its parks and open spaces, providing adequately for its two hundred thousand people.

The grain sown by the Selkirk settlers ushered in the new era of Manitoba and the prairie provinces, and Winnipeg owes the foundation of its real development to its situation as the centre of the unsurpassed agricultural territory which surrounds it. As the outlet of the vast plains of grain fields, it has attained the distinction of being the world's greatest grain market. Practically the entire Western Canadian grain crop passes through its portals, both the exports for European points and for the United States market. Its railroad terminals are a veritable maze of radiating lines, giving the city the most intimate touch with the entire American continent. Its stockyards are yearly becoming a more formidable rival of those of Chicago, whilst farm produce of every description passes through the city on its way to the world's export markets. Winnipeg's exports to the United States alone in 1920, consisting largely of cattle, fish, wheat, butter and farm produce, amounted to \$50,000,000.

Industry has progressed hand in hand with agriculture, and now Winnipeg is in a position to produce practically all the requirements of the Western farmer and householder, and acts as the main distributing centre for the entire West. In a total of some six hundred manufacturing plants, there is about \$85,000,000 invested. These plants, in 1920, had an output valued at \$120,000,000. Fresh industries are starting each year, new incorporations in the province in 1920, exceeding a capitalization of \$100,000,000, and most of them have their headquarters in the capital city. The city's wholesale turnover exceeds \$250,000,000 annually.

Great Water Power Development

In the Winnipeg river the city of Winnipeg has excellent water transportation, and one of the richest sources of water power development on the continent. The plant of the Winnipeg

River Power Company, which is at present under construction and will cost in the neighborhood of ten million dollars, will furnish upon completion approximately 168,000 horse power, in addition to that which is already being supplied the city at the present time. The city is in a position to offer to manufacturers a power rate which is the lowest in the whole of North America.

The present is the West's era, and that of its cities as the centres of rich and growing agricultural centres. Winnipeg, as the greatest of these, shares largely, and its future immensity can be visualized in its phenomenal past. From bald prairie to a modern city of magnitude is the history of but a short span of years, and that it is still growing as rapidly as ever is indicated in the building for 1920, which added nearly eight and a half million dollars to the value of the city's fine aggregate value. As there is certainty in the future of the West, so must grow the city which gives entrance to it.

Immigration for 1920

Government returns of immigration for the year 1920 show that a total of 147,502 new citizens came to Canada in that year in comparison with 117,633 in 1919. By countries, 75,807 immigrants came from Great Britain, 48,866 from the United States, and 22,829 from other countries, comparing with the 1919 figures of British 57,251, United States 52,064, and other countries 8,318. The estimate of 200,000 made by the Canadian Minister of Immigration and Colonization probably failed of achievement by reason of the check put upon the flow into the Dominion by the passing of legislation necessitating the possession of \$250 during the winter months by any artisan or laborer desiring entry.

The world's contribution of new blood to meet the expanding needs of the growing Dominion may, on the whole, after a consideration of all circumstances, be regarded as gratifying. Whilst the figures are in no wise comparable with those of the years before the war, they indicate that the Dominion, having overcome the harassing circumstances of the vicissitudes through which she has had to pass as a result of the war, is getting back into her old stride, and that the tendency in immigration is towards the proportions of the pre-war era. The period since the armistice has been one of disturbed economic conditions, and, with the trend of affairs towards normal, immigration is coming back to its old status.

Contributing Factors to Limitation

Several factors in 1920 contributed to the limitation of immigration into the Dominion, not the least influential of which was the Dominion's own desire and resolve to effect this end, in

view of the prevailing state of industrial affairs. The substantial money test was applied at the opening of winter, and in some months, at certain of the ports of entry, more applicants for Canadian citizenship were turned away than were admitted to it. Again, immigration from Europe, even in the case of most desirable classes, was restricted by the extreme difficulty in securing passages. Whilst this may in one light be regarded as a hindrance, in another it makes for an excellent system of filtration.

Canada has the experiences of other and older countries to learn from in matters of immigration, and she is profiting by them to the extent of following a policy of selection, preferring to develop in a slower and solidier manner than to swamp the country with undesirables for the sake of filling it up. This sane method of expansion, the Dominion has no difficulty in following. American farmers are awake to the opportunities the cheap lands of Canada offer for more profitable farming and a spreading of energy. The tremendous upheaval in Europe following the war has turned the eyes of the most desirable classes of potential settlers in the British Isles and other European countries towards new homes in Canada.

It has been said that Canada should aim at five hundred thousand new immigrants a year, but in order to achieve this she is not going to fling her doors wide open. The present rate of immigration and its desirable constituent may be considered satisfactory, in the light of all circumstances in the Dominion's endeavor of sane and safe development. All indications point to a greater growth in volume, with a maintenance of the same high standard.

United States Farmers for Canada

Nearly fifty thousand emigrants came from the United States to Canada in the year 1920 to make permanent homes in the Dominion. Practically all of these, it is estimated, were experienced agriculturists who either secured free Government homesteads or purchased improved farms. Whilst this very desirable contribution to Canada's man power, deposited in the manner to best serve Canada's need, is only about one-third of that of the years prior to the war, it is estimated authoritatively that the Dominion received last year, and during the war years, as many farmers from the United States as she was wont to welcome, and that the classes whose emigration fell off due to war conditions were the industrial, the speculative, and others not directly producers. It must also be borne in mind that would-be entrants at the border are sifted as carefully as at ocean ports, and that in the existing internal conditions, in some months, as many applicants at border towns were rejected for Canadian citizenship as were accepted.

Gratifying as was 1920's emigration of farmers from the United States, greater attention was drawn in that year to the augury of the 1921 exodus as evidenced in the more general interest taken in Canadian lands and agricultural affairs, the harvest of which will be reaped this year and for years to come. Whilst large numbers of farmers came to settle with their families on Western farm lands, there was an infinitely greater number of scouts who, for themselves or others, came to look over the situation, judge as to locality, pick out the land, and perhaps purchase, and then return to their homes to clear up their affairs before making the final move and settling in the newly chosen homes.

Spy Out the Land

During the summer, under the auspices of the Dominion Government, special trains carrying American editors and business men toured the Canadian West, the trips being to many a revelation. They were surprised and delighted. They became boosters for the country. Many could not withstand investing in the assured future of the country. The consensus of opinion among these men, all representative of thickly settled agricultural districts and in close touch with the economic conditions pertaining to them, was that one hundred thousand Americans would settle in Western Canada during the present year. A great wave of immigration, they felt, was inevitable, and this the first tide of the early spring would seem to justify.

American farmers come up to Canada when it is borne upon them that as fine crops are being raised upon the low-priced lands of Canada as upon their own highly held holdings. They see Canadian farmers carrying off the world's premier honors in wheat and oats and successfully competing in corn against the recognised corn belt. They want to expand and secure larger holdings for themselves or growing families of boys, a development impracticable in their own localities.

The prevailing exchange situation has been decidedly advantageous to United States farmers purchasing in Canada, and instances have come to light where the entire proceeding of acquiring a new Canadian farm has been transacted on the difference in the exchange of money, the farmer at the conclusion of the deal being in possession of land of possibly greater acreage and the sum of money for which he sold his United States property intact.

High Productivity of Soil

Many American purchasers of improved farms have discovered a gratifying feature in the high productivity of cheap Canadian land in the fact that a farm may pay for itself in a single year, returning from the proceeds of the first harvest a revenue in excess of the purchase price of the farm.

United States farmers are being attracted to Canadian farms in increasing numbers yearly, and even the upheaval which the war brought about did not interfere with this category of the United States exodus. In the first seven months of 1920, nearly 7,000 United States farmers took free Government homesteads in the Western Canadian provinces, whilst thousands of others purchased cheap, privately held lands or improved farms. Canada's magnificent crop and her numerous international agricultural successes are going to attract more this year, whilst a sure forecast of what Western Canada has to expect from across the border this year and for years to come, is contained in the tremendous interest exhibited by United States farmers and others throughout the whole of last year.

The Wide Dominion

*By Frederick Niven, the well-known English Author.
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Many times now I have travelled the length of it, and have wandered up and down through a considerable portion of the depth of it; and here I sit down again, in its extreme west, to rest a spell after my last journey through it, to meditate on the thousands of miles I have come and let my memory play with the collected pictures. Some foolish fellow of the yellow press, that press that dotes upon the shrill, the high-pitched, the superlative phrase, is sure to rise up one day and ask for "the greatest Canadian writer" to tell it all. The only way the narration could be attempted, apart from a volume of history and topography, would be in a series of volumes, Balzacian in their design; and that "greatest author" who might make the attempt (building his pyramid of tomes in the manner of the *Comédie Humaine*) would assuredly die before his work was done.

Consider what has to be told—of the Newfoundland banks, fished by Elizabethan fishermen and by fishers from France centuries ago, when the great continent behind them was but a Land Unknown; of the Gaelic-speaking folk of a patch of Nova Scotia; of Acadia, a little world apart; the Annapolis Valley and its apple blossom; of the Labrador and the Moravians; of the old-world towns of the province of Quebec, where it is almost necessary for the visitor to go down where the sound of the locomotive bell comes from, and see the name "Canadian Pacific Railway," or the initials "C.P.R." on the trucks, if he would assure himself he is not in some quaint old village of Brittany; of the Quebec hinterland and the habitant; of the Scots, "more loyal than the king," in the Scots counties of Ontario (you may mispronounce a Scots name in Scotland and be lightly corrected; in Scots Ontario, if you do so, they roar in chorus, not unfriendly, but they roar); of the butt-end of Ontario down toward the Great Lakes, and its hard-working farmers; of that other Ontario, northward, by Muskoka and beyond, where the farms thin out and an apparent laziness begins.

The Country of Birch-Bark Canoes

"Ain't there anybody around?" the visitor hails on summer days, dropped by the train, when there is no sound but the crackle of June bugs in the street, and the place seems deserted; and someone at last comes from siesta in a shadow (surely siesta, by his rumpled hair, albeit he carries a hammer or a pair of pliers in his hand) and replies: "I guess they've all gone a-fishing." That "greatest writer" would have to tell also of the Ontario that becomes definitely north, where the little stores are stocked with mosquito-net and snowshoes, with rifles and fishing rods, steel traps and Mackinaw coats, the

Ontario of the birch-bark canoes and the shining, tawny yellow Peterboro canoes, that one learns to love as one loves a fine living thing; of that land beyond, the land of quiet, and blue and ochre distance, where the glint of a wet paddle, across the wind-brushed lake, alone announces another human being there; of the trails that are only for portaging the canoe from one waterway to another, trails different from any other trail of the continent, the brush close at the ground but cropped away about five or six feet up, for the passage of a man carrying a canoe, overturned, on his back.

The Inventory is Inevitable

Does this develop into an inventory? The inventory is inevitable. The catalogue is only dipped into. Away north, far beyond, are the lonely posts of Hudson's Bay with all their strange history, blent of the sophisticated far from home and of the barbaric; and beyond again are Chesterfield Inlet and Coronation Gulf, where whalers from Dundee lie ice-bound the winter through, and a lone patrol of mounted police (mounted only in name there), for the sake of the Eskimos and humanity and civilization in general, keeps the peace beneath the Aurora.

It can't all be put in one book. In a little article, like a string of beads, it may be suggested. Beyond, to west, are lumbermen again, as in New Brunswick, and prospectors looking for oil, and Indians trapping; and south of them are the Great Plains, once dotted with buffalo herds, more recently with the long-horned steers, and now with the grain elevators.

Then the flat plain begins to slope upward, and anon it rolls and is like the land round Salisbury, toward Stonehenge, and little creeks twist and whirl in the dips; and farther on trees rise in the dips, but, for a long way still, only in the dips. There the talk is not of canoes or to the tune of: "How many pounds dat dog he pull, heh?" There are the horses with the high saddles, such as "the movies" have made familiar in other lands, horses whose sires came up from Mexico, strayed (or stolen) from the herds of Cortes and Coronado—horses and cattle (still a few long-horns left among them, but the sleek little Jerseys numerous, and men now churning and cheese-making in place of "punching cows"), and the motor-cars. The car goes everywhere, even where there are no roads, bobbing up and down over the swells of that part of the earth as a boat careens in a billowy sea.

There the front of the great wall of the Rockies takes the sunrise every day like a mirror flashing; and the ways of life again change, the speech of the people changes yet again, the phrases of common talk are drawn, yet again, from other employ.

The Sign of the Maple Leaf

And it is all Canada. The sign of the maple leaf is still their sign; but what worlds away is the Kicking Horse Pass from Yonge Street, Toronto! Through the mountains are clusters of shacks in bends of sandy rivers and men washing for gold with sluice and long-handled shovel, or with hydraulic apparatus like a fireman's hose; and a little way on, over another range of peaks, under the glaciers of which the big grizzlies and the little coney live, there is no sand at all, but gold in the white quartz, silver and lead sparkling in the chunks of galena, or copper with its dull glint in amalgams made through the ages.

And up the rivers from the west come the salmon in their season. To tell of them is to run the risk of being ranked with Maundeville or even with Munchausen. Would they believe on Tweedside, or on Speyside, tales of rivers where the "saumon" run in such wise that the rivers seem to be almost as much of fish as of water, and the Indians half wade in water, half slide about on the slippery fish, and toss them out on to the banks? Over smoky fires they hang them to prepare the store of winter food. Every year the canneries bustle with renewed activity.

"The Land of Little Sticks"

Everywhere, over all, through the balsam woods, or in "the land of little sticks," on the level plains, the

rolling plains, or down the linked waterways, even in the cities, there is a sense of the bigness of the land. It almost appals the voyager through the desolate beauty of The North Shore (Superior); at the call of a loon breaking the silence awe fills the heart there; it quickens the pulse through Southern Alberta, especially if some great show of Nature be afoot, such as that of the tumble-weed in a south-west wind—bush after bush blown away, brittle, from its stem, bobbing from horizon to horizon with an effect as of loping coyote packs. Always there is this sense of vastness, by lake and plain and on into the mountains, where electric storms, when little rain follows, set the woods alight so that one whole range is as a bonfire; and still on to where the great luscious peaches grow in the Okanagan.

There I have sat down to rest, and recall my journey of the last six months. These are the pictures on which I meditate, and I know what lies beyond, westward still: the lumber camps, the sound of the axe in the high woods of the Coast Ranges, the warning call of "Timber!" and then the dull thud. The logs go down to the mills that send up their white feathers of steam along the inlet sides in clearings among pines and firs, and circular saws come up at a pull of the lever through slots in the moving platforms that carry the logs along, and then "buzz!" the shrill sound breaks out, mounts to a scream, dies away to a hum.

Let no one foolishly ask: "When will the Shakespeare of Canada arise to tell it all!" It will take a thousand voices from a thousand parts to tell of it all. Only after they are dead many, many years, may some one lump together the work of them all, and inform the credulous that it was the work of one, and make him a bugbear to all future Canadians telling the tale or singing the song of their own corner of the vasty land. That is the only way to get "the greatest writer" out of the wide Dominion.

The Value of Exhibitions

By W. Ashley Edwards, Exhibition Branch, C.P.R.

With the steady growth of industrial and agricultural enterprise the value of exhibitions as a significant factor in the promotion of trade relations has come to be recognized. With its main object of exciting public interest in manufacture, agriculture and art, both the expert and the "man in the street" owe much to the educational facilities afforded by the modern exhibition, be it local, national or international.

"There is not an artist or inventor who once obtaining thus a public recognition of his ability has not found his reputation and his business largely increased," proclaimed a committee early in the nineteenth century in making a survey of the results achieved by an exhibition of a national character. In this decision was represented the secret of the success which this form of modern advertising has so notably achieved, namely, the personal touch. The people came, they saw, and were conquered by the appeal which a display of the products of industry, agriculture and art made to them through their visual sense. They appreciated the fact that the development of these products predicated the improvement of their individual and national life. With this motive conveyed, and with motives creating interest, the growth of the exhibition idea was assured.

The First Modern Exhibition

The first modern exhibition was held in 1756 at London by the Society of Arts, which offered prizes for improvements in the manufacture of tapestry, carpets and porcelain. In 1761, the same Society made a display of agricultural machinery. In all manufacturing countries, the nineteenth century witnessed the rapid evolution of the national and international exposition. The latter had its origin at Hyde Park, London, in 1851. It was open for five and a half months, and attracted more than six million visitors.

There were 14,000 exhibitors, Great Britain contributing about 7,000, the British Colonies 500, and the remainder foreign countries. In later years important expositions have been held at Glasgow, Paris (1900), Buffalo, New York (1901), St. Louis (1904), Liège (1905), Milan (1906), Dublin (1907), London (Franco-British) (1908), the remarkable Panama-Pacific Exposition at San Francisco in 1915 which was open from January to December, nearly nineteen million people attending, and Lyons (1919-1920).

The growth in the attendances and number of exhibitors at recent World's Fairs emphasizes the wonderfully improved transportation facilities rendered by the development of railways and steamship lines.

Records show that Canada's development has been represented at international expositions by the increasing attractiveness and quality of her exhibits. The success of her efforts in this direction at the Panama-Pacific Exposition was phenomenal.

The important place that the exhibition now holds in public life is seen in the annual events which are held all over Canada, and notably at Toronto. The exhibition grounds here cover an area of 264 acres and extend along the lake shore for over a mile. Splendid permanent buildings valued at \$2,500,000 are filled annually with exhibits of a utilitarian nature which attract well over a million people. Then there are, of course, the "side shows" and special entertainments which make a pleasing addition to the holiday atmosphere which prevails at "exhibition time."

Exhibitors' Part a Strenuous One

Prodigious effort on the part of exhibition managers and exhibitors is necessary for the consummation of carefully laid plans, which must be made months ahead. To attend to the many needs of the exhibitors, all demanding attention at the same time, the exhibition staff must be possessed of much tact and patience, and able to make decisions on the spot concerning the requirements of one exhibitor without encroaching on the rights of another. To be "open on time" is the objective of every exhibitor. The arrangement of the exhibit in

the most effective manner entails much work and affords much scope for ingenuity. But labor troubles, a hitch in the Customs, and train delays constitute problems which often call for the exercise of the greatest patience and determination, and the effect is seen in many instances with the exhibitor working in feverish anxiety up to the last moment in order that the public may not be disappointed. But in the triumph of the hour when the exhibition is thrown open and visitors troop in to view, with evident appreciation, the instructive and artistic spectacle prepared for them, all worries are forgotten and enthusiasm reigns.

The Canadian Pacific Railway in its work of national development has always realized the personal appeal which exhibitions make to the individual. In its efforts, both at home and abroad, to attract attention to the vast resources of Canada, it takes part in many exhibitions and has permanent exhibit cases installed in different parts of the world. These contain, amongst other things, grain, fruit, game, animal, fish and mineral exhibits which are replaced periodically.

There is no reason to doubt that the exhibition idea will continue to grow. Behind the magnificent results which have been achieved in this direction in recent years lies the force which prevails in all spheres of human endeavor. It is the Spirit of Progress.

The Labor Situation

A review of the labor situation for the month of January discloses a slight increase in the average amount of employment as compared with the previous month, but a somewhat greater loss of time from industrial disputes. There is a further gratifying decline in the cost of the weekly family budget, and a drop in the index number of wholesale prices.

The general decline noted in December continued throughout Canada in the first week of January, but in the second week a fairly strong recovery was evident in all provinces. In metals, machinery and conveyances groups, gains were recorded in iron and steel fabrication, and in the crude rolled, forged, and sheet metal divisions. Employment also showed an improvement in railway car shops and iron shipyards, and in brass, bronze and copper production. In the food, drink and tobacco groups some gains were recorded in sugar refining; abattoirs showed a decline in the eastern provinces but gains in the prairie provinces; confectionery and biscuit makers experienced the usual reaction following the holiday season, but conditions improved later in the month. The flour milling industry was active in Quebec and Ontario, but cereal factories were generally less active. The tobacco industry made marked gains during the month. Textile and clothing picked up remarkably, and some

early losses in boots and shoes were offset by gains later in the month. Pulp and paper mills in the Maritimes and Quebec showed heavy declines, due largely to the seasonal overhauling of plants, but those of Ontario and British Columbia continued fairly steady. Printing and publishing experienced the inevitable reaction after the holiday season, but recovered somewhat before the close of the month. In the wood-working industries, sash, door, and planing mills renewed activity in anticipation of the building season, though building construction was generally at a standstill as yet. Transportation showed a general slackness in all departments. Mining and quarrying also showed declines. Sawmills continued to show the usual seasonal slackness, but logging was generally more active.

There were in existence during the month ten strikes involving about 964 people, and resulting in a time loss of 15,951 working days. The movement in prices continued downward, there being decreases in nearly all staple lines. The average cost of a list of twenty-nine staple foods at the beginning of the month was \$14.48 as compared with \$14.84 in December and \$15.30 in January, 1920.

Mining in 1920

The year 1920 was successful for the Canadian mining industry, the estimated value of production for the twelve months showing a gratifying increase over the figures of the previous year, and being only slightly less than those of the banner year of 1918 when the war stimulus of production was at its zenith. The Government's estimate of production for the year is \$200,000,000 as compared with \$176,686,000 in 1919, and \$211,301,897 in 1918. In all minerals there were substantial increases in production, with the exception of lead and silver, which showed small declines from the previous year's figures, and iron ore, where there was a heavy falling off.

One of the notable features of the mining year was the marked recovery in the production of copper, zinc, and nickel among the metals, and of coal among the non-metallic products. There was also a small increase in gold production. Zinc, coal and asbestos reached the highest figures of production in the history of Canada, whilst the output of chromite, gypsum, fluorspar, mica, and salt was well sustained.

The Situation is Satisfactory

The situation is satisfactory, more so, indeed, than a survey of these figures without making an allowance for extraordinary war conditions would suggest. For under the stimulus of war, Canada's mineral production increased from a total value of \$128,863,000 in 1914 to a value of \$211,300,000 in 1918. The reaction in 1919

resulted in a falling off to \$176,686,000, practically the same value as was placed upon the 1916 production. The banner year of war-stimulated production, 1918, was the only one which exceeded in its mineral production the twelve months just ended.

The total production of nickel is estimated at 1,500,000 pounds, an increase of 38 per cent over the 1919 production, and an output that has been exceeded in Canada only during the four war years. The production of this metal in Canada, for some years to come, will be limited only by the demands of the market, the developed deposits assuring an ore supply for a long period. Smelting capacity has been constructed in the Dominion during the year considerably higher than any reached during the war.

The production of copper is estimated at 82,500,000 pounds which shows an increase of 10 per cent over the previous year. Whilst Quebec production fell off, Ontario output increased by about 25 per cent. The estimated value of gold production is placed at \$16,000,000, comparing with \$15,850,423 in 1919. Whilst the total value has slight increases during the last two years, the production is still less than that of 1916, when the total was more than \$19,000,000, or in 1900, when a maximum of nearly \$28,000,000 was obtained. Ontario probably contributed about 72 per cent of the total Canadian gold production in 1920, derived from seven mines in the Porcupine district, three at Kirkland Lake, and several miscellaneous properties.

Annual Coal Production Increases 18%.

Silver production for the year is put at 13,500,000 ounces, or 2,500,000 below that of 1919. The decrease was general. Lead was the other mineral which showed a decline, its 35,500,000 pounds being 8,827,000 less than the 1919 production. The estimated production of refined zinc and zinc recovered from ores is placed at 42,000,000 pounds. The coal output for the twelve months is figured to have been at least 16,000,000 short tons, which is 2,500,000 tons, or 18 per cent, over that for 1919. Alberta leads the provinces with an estimated production of 6,700,000 tons. The estimated value of the Dominion's production is \$70,000,000.

Iron ore production fell away considerably during the year, it being estimated that shipments from the mines did not exceed 120,000 tons, coming mainly from the mines of the Algoma Steel Corporation and Moose Mountain, Ltd., in Ontario. The total production of pig-iron from blast furnaces and electric furnaces in 1920 is estimated at 1,080,000 short tons, and the total production of steel ingots and steel castings at 1,220,000 short tons, both records showing a substantial increase over the production of the previous year.

The Sea Fish Catch of 1920

The total value of the sea fish catch in Canadian waters on both coasts in 1920 was \$26,153,844. British Columbia led the provinces of the Dominion with nearly half the Dominion value, or \$12,612,773. Nova Scotia, on the other side of the continent, took second place with \$8,763,000. The other provinces in order were New Brunswick, \$2,528,314; Quebec, \$1,513,432; and Prince Edward Island, \$736,325.

Salmon continues to maintain its place as Canada's premier fish, and in 1920 it accounted for the largest individual revenue with \$8,130,876, from a catch of 1,182,278 cwt. Cod secured the second place with a catch of 1,871,294 cwt., having a value of \$5,053,369. The lobster catch of 376,855 cwt. was worth \$4,249,480, taking the third place among Canadian fish, and not far behind it in value was the halibut, whose total of 245,364 cwt. had a value of \$3,368,058. Another fish which reached over the million-dollar mark during the year was the herring, with a value of \$2,012,638 coming from the catch of 2,146,986 cwts. Following in order of value come haddock, mackerel, smelts, sardines, pollock, hake and cusk, and pilchards, well into the thousands of dollars in value, and below this figure alewives, oysters and black cod.

The principal fish of the British Columbia catch is salmon, the province accounting for almost the entire Dominion toll with a value of \$7,778,100. Nova Scotia's first fish is the cod in which the province accounts for by far the greater part of the Dominion's total. In New Brunswick the largest revenue accrues from soles with \$345,380, smelts being a close second with \$313,627. In Quebec the premier honors go easily to the lobster, which in 1920 accounted for a revenue of \$370,585. The waters about Prince Edward Island also yield lobsters to a higher value than that of any other sea product, and the year's value in the little province from this source was \$497,248.

An Untapped Industry

An absolutely unique industry, a hitherto untapped source of revenue, awaits the move of enterprising men and capital in the Gulf of St. Lawrence, which at the same time would turn a national loss into a national gain, protecting Canadian fisheries and preserving a greater supply of the best fish for the home and export markets. This is no less than exploiting the myriad schools of porpoises which infest the estuary of the St. Lawrence and take their annual toll of the fish of these waters.

An ocean traveller leaving a port on the St. Lawrence cannot fail to observe the countless schools of dolphins, combining in appearance the pig and the fish, which sport on the tops of waves and disappear beneath the surface, following the vessel until it is well on its way to

sea. These mammals, which swarm the estuary in the open months of the year, are at once an ever increasing menace to Canadian fisheries and a national loss, and an unexploited source of enormous revenue.

The porpoise is a gregarious animal which usually travels in small herds and attains a length of five feet or more. It feeds on mackerel, pilchard, herring and other fish, being often caught in fishermen's nets after pursuing schools of its prey. It has been estimated that each member of the herds of porpoise in the St. Lawrence consumes about one hundred pounds of fish per day, largely the cod and salmon, which from the coolness of the waters are of a very high excellence and some of the Dominion's best fish.

Great Variety of Uses

Whilst the porpoise is a national pest the process of protecting the Canadian fisheries might be attended with considerable profit for practically every part of the animal can be utilized in some manner. The blubber contains a valuable oil which has a constant commercial value. The skin can be transformed into a fine leather which has a variety of uses. Articles made from this product are said to surpass, in their capacity for wear, the same appurtenances manufactured from the carcasses of other animals. From body refuse, a valuable fertilizer, rich in phosphates, can be extracted, indispensable to lands in which this property has been exhausted. It is stated that every particle of the body can be put to commercial use and be made revenue producing.

Enterprise and capital are all that are needed to put on foot this profitable industry, which would be an asset to Canadian development in the protection of fisheries, as well as a source of handsome revenue to the instigators.

Nova Scotia's Timber

The timber tracts of Nova Scotia continue to be among the first of her income-producing resources, and in the year 1920, the total provincial cut was about 350 million feet—exceeding the normal cut by about 50 million feet—with a value as raw material of \$12,250,000. This does not by any means comprise the value of the lumber industry to the province where the allied trades have always been important, and the manufacture of wood products practically doubles this value bringing it up to an estimated total of \$23,810,000. The additions to the lumber cut already noted are: cordwood, \$5,150,000; barrels and boxes, \$1,900,000; pulp, \$1,560,000; pit props and brooms, \$750,000; telegraph and telephone poles, \$50,000; Christmas trees, \$50,000; hoop poles, \$50,000; poles, etc., for fences, \$250,000; ship timber, \$250,000; laths, \$250,000; wharf timbers, \$500,000; shingles, \$150,000; miscellaneous, \$150,000.

Nova Scotia has an estimated forest area of 5,744,000 acres of her total land area of 13,483,000 acres made up of hemlock, pine, birch, oak and maple, to the extent of about ten billion feet of merchantable, coniferous, saw timber, five billion feet of hardwoods, and eight billion feet of red spruce and hemlock. Her valuable reserve of pulpwood is figured out at twenty-four million cords. Though possessing such extensive timber resources, the greater part of which is yet untouched, Nova Scotia ranks only fifth in her lumber cut among the provinces of the Dominion, and offers remarkable inducements to those who bring capital and initiative to the exploitation of her forests.

Exports Increasing Steadily

Canada is one of the first lumber producing countries of the globe, exporting from her shores five-sixths of her gigantic lumber cut, and the province of Nova Scotia contributes her share to this export trade. The peninsular province is situated convenient to the most important trade routes, and has excellent ports and shipping facilities which considerably facilitate the export trade to those lumber concerns operating in the province. Of her lumber cut and manufactures in 1920, amounting to nearly \$24,000,000, seventy-five per cent was exported and twenty-five per cent consumed by the home demand. Of the total amount approximately thirty per cent went to the United States, twenty-five per cent to the United Kingdom, ten per cent to Upper Canada, and ten per cent to the West Indies, South America and Newfoundland.

An important section of the lumber industry of Nova Scotia, and one which is common with the rest of the Dominion is showing a yearly increasing activity in value and output, is pulp and paper, which promises yet greater development owing to the propinquity of resources and mills to the world's markets facing a shortage. In 1919, there were seven pulp and paper mills in the province, all using the mechanical or ground-wood process. In 1920, these were supplemented by the mill at Wolfville, whilst that at Bear River was considerably extended and its output increased. About one and a quarter million dollars is invested in the pulp and paper industry in the province.

The past few years have seen a growing interest on the part of both the Government and people in the preservation of the provincial forests, which constitute so valuable an asset, and this has resulted in the establishment of systems of reforestation, and methods of conservation and fire protection.

Whilst almost two-thirds of the total area of the province is classed as timber land, thousands of acres have been completely devastated by fire, and the policy of the province is now not only to replant these enormous sections, but to take adequate steps to prevent future depredations by this blight.

Departmental Publications

Any of the following publications will be sent free on request.

Alberta, Saskatchewan and Manitoba.—A descriptive statistical booklet on the three prairie provinces with full information on the West.

The Western Provinces of Canada.—Booklet devoted to history, progress, development, and possibilities of Western Canada.

The Park Lands of Central Alberta.—Descriptive of the area tributary to the Calgary and Edmonton line of the Canadian Pacific Railway in Alberta. History, description of soils, development, lands open for settlement, and information for settlers.

Irrigation Farming in Sunny Alberta.—Full description of Alberta's irrigated lands, their progress, production and possibilities.

Improved Farms in Eastern Canada.—Lists of unoccupied farms in Ontario, Quebec, New Brunswick and Nova Scotia, together with area, adaptability and prices.

List of Improved Farms in the Annapolis Valley.—Index to farm openings in the beautiful Nova Scotia valley, extent of holdings, and prices.

Business and Industrial Opportunities in Western Canada.—Full listings of industries existing and business openings in the provinces of Western Ontario, Manitoba, Saskatchewan, Alberta and British Columbia.

Canadian Pacific Reserve Farm Lands in Lloydminster and Battleford Districts.—Information of Canadian Pacific lands in these districts, history, farming information, progress, and possibilities.

What Some Settlers Have Done in Western Canada.—Stories told by settlers from many lands, of the success they have achieved on Western lands.

Canada's System of Government.—Canadian government briefly outlined to portray its democratic traits.

The Story of Canadian Nickel.—History of the nickel mining industry.

Canadian Oil Exploitation and Prospects.—An expert engineer's history of Canadian oil development and future possibilities.

Canadian Water Power Development.—Authoritative and exhaustive survey of water power reserves and possible development.

Paper Pulp from Flax Straw.—An investigation engineer shows the possibility of the development of a new industry in the West.

A Canadian Grain Handling Plant.—How Canadian grain is stored and shipped. Authoritative article on Canadian elevators.

Value of a Settler to Canadian Railroads.—Computation from reliable statistics of a farming settler's revenue-producing worth to Canadian railroads.

Returned Soldier Land Settlement Scheme.—Details of settlement conditions of returned soldiers on the Company's lands in Western Canada.

Bituminous Sands of the Athabasca Region.—Description with known values, and possibilities of development of the widely known tar sands of Northern Alberta.

The New Canadian Oil Field.—Dealing with the Arctic oil region of the new strike.

Water Powers of the Maritimes.—Authoritative article on the undeveloped power systems of the Eastern provinces.

Water Powers of Manitoba.—The water powers of this province dealt with exhaustively.

Oleomargarine.—History of oleomargarine in Canada and its future prospects.

Synopses of Natural Resources.—Forty-five pamphlets dealing briefly but concisely with Kaolin or China Clay, Oil Shales, Mica, Fluor-spar, Asbestos, Molybdenum, Magnesite, Fruit, Flax Fibre, Nickel, Coal, Clays, Salt, Copper, Zinc, Silver, Gold, Pyrites, Iron, Potash, Talc, Feldspar, Platinum, Phosphate (apatite), Manganese, Graphite, Cement, Barytes, Gypsum, Irrigation, Petroleum and Natural Gas, Corundum, Sulphates of Sodium and Magnesium, Timber and Pulpwood, Fish, Fur, Peat, Grazing Lands, Mineral Waters, Building and Ornamental Stone, Whaling, Sealing, Wheat, Oats and Barley, and Water Powers.

The Department of Colonization and Development

The Department of Colonization and Development has the following offices established in the United States, Great Britain and Europe, whose representatives, at any time, will be glad to furnish information regarding Canadian agricultural, industrial and commercial enterprises.

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WINNIPEG, Man.	J. F. SWEETING, Industrial Agent, Canadian Pacific Railway.
CALGARY, Alta.	M. E. THORNTON, Supt. U.S. Agencies, Ninth Ave. and First St. East.
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NEW YORK, N.Y.	L. F. MOWREY, District Representative, 1270 Broadway.
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or any agent of the Canadian Pacific Railway Company or Canadian Pacific Ocean Services, in United States, Great Britain, or Europe.

J. S. DENNIS, CHIEF COMMISSIONER,
Department of Colonization and Development,
Canadian Pacific Railway Company.

Ask the Canadian Pacific about Canada



Agricultural and Industrial Progress in Canada

A monthly review of Agricultural and Industrial progress in Canada, published by the Department of Colonization and Development of the Canadian Pacific Railway at Montreal, Canada.

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MONTREAL

April, 1921

Canada's Contribution

THOUGH much naturally remains yet to be done, the war wound which Canada received in the great European conflict is commencing to heal. Many vexing problems of reconstruction have been solved, and to quote one authority, the nation's feet "are firmly planted in the new road, and she is stalwartly stepping out once more in the ways of national development."

In 1920, Canada harvested a wonderful crop, and the wealth of her agriculture, the basis of her prosperity, is reflected widely. Her forests, mines and fisheries contributed more than usual, whilst other countries, recognizing the opportunities, established branch factories and industries in various parts of the Dominion. Indications of progress, pointing to a period of conservative and reasonable advance during the coming year, are evident.

Though Canada has many problems before her and has her share of non-producers and unemployed, both of which classes are, from the economic point of view, misfits in the community, and in spite of the large sums diverted from production of real wealth, yet the Dominion, as will be seen from statistics issued by the Natural Resources Intelligence Branch of the Department of the Interior, is well ahead of the numbers of her

population in her contribution to the world's needs.

In two of Canada's greatest resources, quoted here, viz., lumber and fish, although definite percentages are not yet available, it is within the mark to say that Canada produces 20% of the lumber and 20% of cured and canned fish.

Canada is second in the list of the world's lumber producing countries, her annual production being about 4,000,000 M.F.B.M.

The total exports of pulp and paper for the last current year are valued at \$163,000,000. If pulpwood exports are added, it brings the total to \$178,000,000 as compared with \$107,000,000 for 1919.

The Government estimate of last current year's total mineral production is \$200,000,000. The estimated value of gold production is placed at \$16,000,000 and the estimated value of coal production is \$70,000,000.

Canada has .5 Per Cent of the World's Population

She Produces:—

- 90 per cent. of its cobalt.
- 88 per cent. of its asbestos.
- 85 per cent. of its nickel.
- 32 per cent. of its pulpwood.
- 20 per cent. of its lumber.
- 20 per cent. of its cured fish.
- 18 per cent. of its oats.
- 15 per cent. of its potatoes.
- 12 per cent. of its silver.
- 11½ per cent. of its wheat.
- 11 per cent. of its barley.
- 4 per cent. of its gold.
- 4 per cent. of its copper.

Agricultural products take first place amongst Canada's exports for the last twelve months, according to the trade statement from the Bureau of Statistics for period ending January, 1921. The total value of agricultural products exported was well over \$550,000,000, in a total exportation of Canadian products valued at \$1,235,000,000.

The table speaks for itself.

Agricultural & Industrial Progress in Canada

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It will be appreciated by the Department if editors and writers using matter from this Bulletin will quote source.

Norman S. Rankin, *Editor.*

General Agricultural Situation

*Compiled by J. Dougall, General Agricultural Agent,
C.P.R., Montreal.*

Statistics compiled by the Provincial Governments of Manitoba, Saskatchewan and Alberta indicate the acreage prepared for crop for the year 1921-1922 to be quite up to expectations. The weather during last autumn was favorable for plowing; the moisture, except in some districts in Alberta, was up to considered average, and the seed bed for this year may therefore be said to be satisfactory.

The following figures regarding the amount of land ready for seeding up to the close of the year 1920 are taken from the statistics of the various Governments.

Statement of Acreage Prepared for 1921 Crop.

Manitoba		
	1920	1919
New Breaking.....	188,200	196,200
Summer Fallow.....	1,410,000	1,350,000
Fall Plowing.....	2,730,000	1,833,500
Saskatchewan		
New Breaking.....	549,837	849,759
Summer Fallow.....	3,075,751	4,395,746
Fall Plowing.....	748,085	498,724
Alberta		
New Breaking.....	485,852	875,000
Summer Fallow.....	1,833,700	1,250,815
Fall Plowing.....	1,764,325	400,000

Total Average for Three Western Provinces:—

1920	1919
12,758,750	11,649,744

This is an increase of 1,136,006 acres over that of 1919. The spring season has opened early this year, and several places in Alberta, Saskatchewan and Manitoba have already reported plowing in progress. This would indicate that we may expect an increase in the acreage to be seeded for the year 1921.

Snow and rain have fallen during the latter part of March and reports are general that the condition of the seed bed is good.

Live Stock Situation

The general condition of live stock throughout the Dominion is satisfactory. The winter has been mild and Western cattle came through the winter in good condition. There is still a desire by farmers to reduce their herds on account of the drop in prices, and there are few stocker

or feeder cattle going to the country except in Ontario where there has been a tendency to buy; the early spring has urged feeders to this course. The rejection of the Fordney Bill by the United States Government has precluded, for a time, the imposition of a tariff against Canadian cattle to the United States and feed lots will be valued by market conditions in the two countries.

The hog situation continues to be discouraging, but we cannot expect much improvement until next autumn as farmers cannot very well get back into hogs before that time.

Wool Markets

The general condition of the wool market is still dull. There is demand. Growers who have been holding off their 1920 clip are now sending same forward as any hope they may have had that prices would go up have gone. The Co-operative Wool Co. report considerable wool coming to their Toronto warehouse for grading. They further report 1,800,000 lbs. sold since January 1st at an average price of 20c. per pound against 33c. for 1920.

Farm Values Continue to Rise

Perhaps the most attractive feature of Canadian land to farmers and intending settlers in other lands is the low price at which it may be acquired, coupled with its high fertility and productivity. When as rich and bountiful a crop can be grown on land procurable at less than \$50 per acre as on that valued at \$100 or more per acre, there is no question as to which a farmer, being fully conversant with the situation, is going to decide upon in the matter of investment. Yet indications tend to show that the cheap lands of Canada are speedily becoming not so cheap, and that the effects of rapid settlement and abundant yields are being experienced in a steady elevation of the prices at which farmers and other owners hold their land.

The latest report of the Dominion Bureau of Statistics, covering a survey of farm values throughout the Dominion for the year 1920, indicates the further progress of this upward trend. The average value of occupied farm land in Canada, including both improved and unimproved land, was \$48 per acre, whereas in 1915, but five years previous, the same acre was worth only \$35. The consistent rise maintained is exhibited in the figures of \$36 in 1916, \$38 in 1917, \$41 in 1918, and \$46 in 1919.

Western Lands Highest and Lowest

Many factors enter into an estimation of the value of farm land, and naturally this figure cannot be applied indiscriminately to any one province, the average in some being much higher and in others lower. Land, it may be generally accepted, is held at higher prices in the older eastern provinces, or in the fruit raising districts

Agricultural and Industrial Progress in Canada.

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such as those of British Columbia where cultivation is more intensive and an acre therefore capable of producing greater revenue.

The small ranches of British Columbia naturally come high, and this province easily leads by a wide margin all other provinces in the value of its farm land, its \$175 per acre indicating how much lower land may be purchased in other parts of Canada. Ontario and Quebec, adjacent areas where conditions largely similar prevail and where the farming of the same crops is carried out to much the same extent, have the same acreage value—\$70. The little province of Prince Edward Island follows with a value of \$49, and the Maritime Province of Nova Scotia with \$43. The earliest settled Western province, Manitoba, takes sixth place with an average value of \$39, exceeding the older province of New Brunswick, which comes next, with \$35. Saskatchewan and Alberta, which might be almost considered one area in point of extent and length of settlement, are bracketed together as being the cheapest localities in which to buy land in Canada, at \$32 per acre. Paradoxically, these last two provinces have for some years now vied with each other in their efforts to secure to Canada the world's wheat championship, with the result that it has done no more than cross the provincial border separating the two.

Land Returning in Excess of Price

Items occur periodically in the newspapers of farmers in older settled countries abandoning their farms because of inability to pay the rent on them, which in many cases exceeds in its annual rate the amount which would give them a Canadian farm for all time. And in the Canadian West there are still thousands of acres unproductive, of doubtless a greater fertility than those older areas, awaiting the man with the plough. The average acre sown, for instance, in the province of Alberta in 1920, where the average acre is worth \$32, produced 20.50 bushels of wheat according to government figures. Between harvest and Christmas this wheat was selling around \$2.00 per bushel, which would give the farmer a return of more than \$40, or nearly \$10 in excess of the price at which the acre was valued. This lends credence to statements that farmers in the Canadian west have paid for their purchased farms with the first crop.

Farm lands in Canada are undoubtedly rising in value, and this tendency is especially marked in the Western provinces. Whilst there are yet thousands of acres which can be secured at prices lower than the government's estimated average value in the provinces, there are also many thousands of acres held by their owners at three or four times this amount. When free government homesteads and lands purchased at less than \$20 per acre sell a few years later around the \$100 figure, settlement becomes not

only a cause but an effect, and the increase in cultivation must still further elevate land values and prices.

The Products of Nova Scotia

Some interesting facts in connection with the products of the Province of Nova Scotia are set forth by Mr. W. H. Dennis of Halifax, managing director of the *Herald*, the *Mail* and the *Leader* of that city. They indicate, in a graphic manner, the output of coal, grain, fruit, fish, wool, lumber, etc.

Coal—A train of coal cars containing Nova Scotia's yearly output of coal would reach from New York City to Salt Lake City.

Apples—A year's production of apples in standard barrels, placed end to end, would reach from New York to Indianapolis.

Lobsters—Nova Scotia produces eighty per cent. of the world's supply of lobsters.

Potatoes—A year's production of potatoes packed in barrels, end to end, would extend from New York to Denver.

Wheat—The wheat produced last year in Nova Scotia would give a standard loaf of bread to every man, woman and child in the States of New York, Pennsylvania, New Jersey, Delaware, Maryland, Virginia, and the District of Columbia.

Oats—Enough oats are grown yearly in Nova Scotia to feed generously for three days every one of the 21 million horses in the United States.

Wool—The wool produced yearly would make 500,000 suits of clothes.

Lumber—The yearly lumber cut produces sufficient material for 30,000 residences of eight rooms each.

America's Champion Butter Maker

The province of Saskatchewan, Canada, lays claim to possessing the champion butter maker of the American continent in the person of T. S. McGrath, manager of the Birch Hills Branch of the Saskatchewan Co-operative Creameries, Limited, and a survey of this dairyman's record for the year 1920 discloses substantial grounds for this pretension. He is a native of Prince Edward Island who received an early and thorough training in butter and cheese making, but admits he has learnt a lot about his profession since going west in 1912.

This butter maker's record for last year included first prizes and grand championships at exhibitions held at Moose Jaw, Winnipeg, Edmonton, Saskatoon, Regina, Prince Albert, North Battleford, Toronto, Vancouver, Ottawa and Charlottetown, which pretty effectively covers the Dominion fairs at which dairying was a feature. At the Canadian National Exhibition at Toronto, where Mr. McGrath secured first and second prizes and silver cups for the highest average scores, he met and vanquished all the premier dairymen of the Dominion, and at the National Dairy Show at Chicago, he carried off

second prize in the open class for creamery butter against the butter makers of the whole continent. In addition to these honors, a notable standing was made in the educational butter scoring contest held at Montreal, where, after submitting a fourteen pound box of butter each month for six months, he obtained the highest average score of 96.18 points, an Alberta entrant making a close second.

A Province of Versatile Accomplishments

Saskatchewan is a province of versatile accomplishments. Having attained early fame as a fur producing area, it turned successfully to the raising of beef cattle on a tremendous scale until more intensive agriculture limited the ranges. It now holds the lead among the Canadian provinces in regard to wheat, having achieved the greatest provincial yield and maintained it for some years. Now it bids fair to become also the Dominion's first dairy province. Phenomenal strides have been made in the industry in the past few years, and the year 1919 alone showed an increase in production of nearly 35 per cent over the previous year. In 1920, with 354,507 milch cows in the province, a production of more than 29,000,000 pounds of butter was obtained. The export trade in this product is also extending rapidly, and markets on the other side of the international boundary and across the Atlantic to which it has penetrated, regard it as the best of its class.

The high quality of the rich, well-flavored cream of the province is to a large extent responsible for the prominent place Saskatchewan is attaining as a dairy section. Another important factor in the extension of production is the splendidly organized and operated creameries of the Saskatchewan Co-operative Creameries, Limited, a farmers' owned and controlled organization, which now number twenty-five.

About thirty thousand farmers in the province patronize these creameries, shipping their cream to the nearest branch to be there manufactured. It was as manager of one of these branches, with the excellent raw material supplied by local farms, and the efficient service of his organization, that Mr. McGrath has been able to most amply employ his professional skill and give such wide prominence to Saskatchewan as a dairying province.

The Fruitlands of Manitoba

In prefacing his address on the above subject before the Manitoba Horticultural Society recently, W. J. Boughen said: "My title seems a joke to many people who have lived in Manitoba a long time, yet to a comparative few, those who know what the province produces in this way, it is not a whimsical title but one which has a real foundation in fact. The residents at

large of Manitoba do not know the fruit growing possibilities of their own province, and I believe this may be extended to Saskatchewan and Alberta."

Mr. Boughen, to use his own expression, has often staggered friends of his in the same province by excellent crops of raspberries, sandcherries, currants, and crabs, and then modestly passing over his own achievements he goes on to say, "I never saw a better crop of apples than that at Stevenson's orchard at Morden in 1919, when 300 bushels were harvested. The heavily loaded trees surpassed anything I ever saw, every tree loaded to its fullest capacity."

A Natural Wild Plum Orchard

The Morden district referred to is a natural large wild plum orchard and, due to the stimulus of the Dominion Experimental Station in the district, is now producing large quantities of the cultivated varieties, which thrive excellently and arrive at substantial size in the soil which is so admirably suited to their production. Last year a heavy demand was met at the experimental farm by a splendid crop of commercial sale proportions.

Grafting tame varieties on the wild trees is a work easy of successful performance, and the subject is treated practically and concisely in a pamphlet published by the government. Trees six years old have yielded two pails per tree, and the trees grow to advantage up to six by eight feet or nine hundred trees to the acre. The profit in this venture with plums at \$2.00 per pail may be easily estimated, whilst a market eager to absorb all the product surrounds the district.

There are not many districts where the large apple has been grown successfully, but a few have been raised as far north as Dauphin, and the transcendent crab and the red or yellow Siberian will thrive much farther north or west than this. Crab apples have been widely and extensively grown with the most gratifying success.

The Prolific Sandberry

A little-known fruit in Canada which has given excellent results when transplanted in Manitoba is the sandberry, which is in reality a dwarf plum. It is exceedingly prolific if grown on light sandy soil. In the wilds it grows on dry gravel ridges or the pure sand, and can be cultivated to a successful and profitable extent about a farmhouse located in such circumstances. The fruit crosses readily with the plum, and some of the best plum hybrids are of this sandcherry crossed with the big California or Japanese plums.

Another fruit largely imported, and which experience has proved can be successfully raised on the prairies, is the low brush cranberry. It has been authoritatively stated that no fruit-

lands pay as well as a cranberry bog, and the homesteads of the west contain thousands of miniature swamps, the natural home of the cranberry, possessing all the requisites for a properly conducted cranberry bog. Successful cultivation in Manitoba has led the way for other western agriculturalists to follow.

It has been clearly demonstrated that the cultivation of the apple, the plum, the sand-cherry and the cranberry can be successfully and profitably followed in Manitoba. This is the experience of the province's horticultural pioneers. What can be achieved in Manitoba has equal opportunity in Alberta and Saskatchewan. In fact the irrigated districts of Southern Alberta have of recent years made a most remarkable showing in producing a wide variety of excellent fruits, which are now, to an extent, grown commercially.

Numerous Wild Berries

Cattle and grain have largely filled the view of the prairie farmer to the exclusion of other branches of agriculture. If fruit is not grown more extensively it is not because of unsuitability of soil or climate (for the numerous species of wild berries which cover the prairies and parklands before the advent of the fence and plough, effectively contradict this), but because there has been no time for this culture in the busy day of the pioneer agriculturalist. Another era has dawned. Experimentation by government experts into the best varieties for hardiness and fruitfulness is extensive and successful, and new varieties of fruits are continually being produced by the experimental farms.

With the steady progress being made in cross-breeding and selection, it is confidently believed by Mr. Boughen that there will not be a habitable locality in Canada which may not have its fruit garden.

Railway Deficits and Immigration

Since the announcement by the Minister of Railways of last year's huge operating deficit incurred by the Canadian Government Railways, much controversy regarding it has been carried in the Canadian press, and at the same time the curtailment of immigration is being equally widely discussed. It may not have occurred to the general public that these subjects are intimately related—that one is the direct complement of the other—and that immigration of a desirable class has been directly responsible in the past for the success of railroads in all new countries.

As president of the only large railroad system in the world which to-day is operating successfully, it is not surprising that Mr. Beatty's views on the subject have been solicited by the press, and in his statement he points out clearly that Canada's most essential and urgent need is

population, and that the success of the Canadian Pacific Railway has been directly due to a widespread aggressive and constant immigration propaganda.

Many students of immigration are inclined to the belief, although no statistics are available on the subject, that a very small proportion of the incoming immigrants swell the ranks of the unemployed; that they are taken care of by friends already in the country and find work almost immediately. As far as the Canadian Pacific's activities are concerned, they are limited to bona fide farmers and those who specifically declare their intention of going on the land, and who prove to the satisfaction of its agents that they have the necessary capital to do so. The result of this policy has led to a large settlement along the lines of the railway and the gradual building up of a natural tributary traffic.

Any curtailment of immigration of the right class can only result in increasing the difficulties which the Government must face in their urgent problem of placing its railways on a paying basis.

C.P.R. President's Interview

Interviewed by a representative of the Canadian Press on the subject of the deficit on the Canadian National Railways, Mr. E. W. Beatty stated that he was not prepared to make any statement except that the fact must not be forgotten that the Management of the National Railways were operating under exceptionally difficult circumstances not of their own making, but emphasized in their case by the unnecessary mileage comprised in a system, parts of which were built for competition with the other, and not as part of a single transportation unit.

The C.P.R. President stated that the gravity of the situation could not be denied and that a solution of the difficulties facing the Canadian people in the possession of this extensive system was one which should command the attention of the best minds and the advice of the best experts in the country.

"I am afraid," he said, "that many people in Canada do not sufficiently realize that the most urgent and essential need to-day is increase in population, not only to provide traffic for the railways, but also to help pay our enormous national indebtedness. So far as the railways are concerned, the National Railways are even more concerned in this demand for population than the Canadian Pacific, owing to the extent of sparsely populated country in which so much of their mileage is located. It was an aggressive immigration propaganda that built up the Canadian Pacific, and without immigration the prospects of the Canadian National are, in my opinion, hopeless.

Desirable Settlers

"Any legislation which would stem the tide of desirable immigration must inevitably pile up further deficits, for immigration is Canada's great salvation. Mr. Crerar, who was speaking particularly in the interests of the National Railways, struck the right note when he declared before the Canadian Club in Montreal, that a wise and vigorous immigration policy would help solve the problem. Mr. Crerar also referred in another address to the foreign-born immigrants, commending the progress they had made in Western Canada, and pointing out that over fifty per cent. of the students at Manitoba University were of foreign parentage.

"The same evidence is contributed in an interesting article in the 'Grain Growers' Guide' in reference to the three hundred thousand Ukrainians in Western Canada, in which it is stated that these people of sturdy farming stock from Central Europe have four large educational institutes at Saskatoon, Winnipeg and Edmonton respectively, and had become a real asset to Canada. The people from the Scandinavian countries have made admirable settlers. During the year 1920, nearly 1,600 of these came as immigrants to Canada, of whom only 10 were deported. All of them are thrifty, hard working people.

"I quite agree with those who object to the immigration of city-bred Continentals of poor physique and doubtful health who would at once drift into slums, or of large communities of foreign born, who frankly declare they do not intend to assimilate with English speaking Canadians, but I consider it absolutely necessary to the immediate betterment of Canadian financial, commercial and traffic conditions, that the gates of Canada be once more opened not only to the British, French and American immigrant, but also to the Scandinavian and the more desirable type of Continental.

Sort of People Needed

"It is not only farm hands and domestics who are required. What progress can Canadian industry make if the skilled mechanic is to be practically shut out. And without Canadian industry where are we to find exports for the Canadian Merchant Marine. We neither can nor dare stop this tide of desirable immigration, or say to it like Canute, 'Thus Far and No Farther.'

"Policies which are perfectly appropriate in the case of the United States would not necessarily be applicable to this country. By all means let us exclude the undesirable immigrant, but admit those who in time will contribute to this country's commercial prosperity and economic strength."

Expansion of Pulp and Paper Industry

With the continually increasing demands from the United States, from Europe and from the Orient, the pulp and paper industry in Canada is yearly assuming a more important aspect in the Dominion's industrial life, and as the world's stores of pulpwood are becoming gradually depleted, a greater number of countries, at one time supplied by their own forests, are calling upon Canada's extensive stores. The current year 1920 emphasized in a yet greater manner the prominence of the industry in Canadian commercial life, and in addition to a substantial increase in the export business, a noticeable feature recorded was the number of new enterprises planned and begun as well as the expansion of several of the older companies with a very general capital reorganization made necessary by such expansion.

According to government report export demand for the higher grades of pulp and for newsprint paper exceeded the supply throughout the year, and the exports of these commodities have greatly exceeded both in value and volume those of any previous year. The total exports of pulp and paper for the current year 1920 were valued at \$163,217,988 as compared with \$96,376,664 for 1919. If to this were added

pulpwood exports, the value of all three would be \$178,906,159 as compared with \$106,969,000 for the preceding year.

Paper with a total value of \$86,744,010 was the most important item in the year's manufacture comparing with \$59,391,000. Wood pulp came next with a total value of \$76,383,978, an appreciable increase over the previous year's \$50,796,660. Pulpwood exports amounted to \$15,778,171 as compared with \$10,593,581 in the preceding year, whilst the value of newsprint alone exported in 1920 was \$72,920,223, whereas in 1919 it was only \$50,796,661.

Increase in Quantity Exported

There was an increase in the quantity exported in all departments of the trade. Newsprint shipped out of the country amounted to 15,238,891 cwts., as compared with 14,192,556 in 1919; wood pulp, 16,399,897 cwts. compared with 14,182,533 cwts.; pulpwood, 1,248,395 cords compared with 1,060,275 cords.

The United States took about 80 per cent of the pulp and paper exported from Canada during 1920, or approximately \$129,356,000 worth out of a total of \$163,217,000. Of this, paper was valued at \$67,722,284 and wood pulp at \$61,663,303. In addition, there were 1,247,000 cords of pulpwood valued at \$15,778,000 whilst all the pulpwood exported went to the United States.

Exports to the United Kingdom during 1920 were valued at \$13,417,574, wood pulp at \$8,543,119, and paper of all kinds \$4,874,455. In 1919, the total exports were \$8,522,738, divided into wood pulp \$4,715,465 and paper \$3,707,273. Exports of pulp and paper to all countries during 1920 were approximately \$21,500,000, or about 75 per cent greater than for 1919.

The steady development of the industry in Canada is plainly marked in the course of the year in the increase in the value of exports towards the end of the year. During the first three months, the average value of total paper exports was a little more than \$5,000,000 whilst during December their value was \$8,974,869. The average monthly value of wood pulp exports during the first quarter of the year was \$2,286,000 and for December their value was \$5,974,869.

Expansion has been General

A review of the industry covering the whole Dominion shows that the expansion has been general, and takes within its scope operations in every province where the pulp and paper industry is actively followed. Practically every one of the larger corporations has, in view of the excessive demand for their product, expanded broadly, through reorganization has increased timber holdings, mill capacity, and with this latter added to their annual output. Expansions of business in Ontario cover operations at Cornwall,

Port Arthur, Fort William, Nipigon, Kenora, Frankford, Kapuskasing, Thorold, Cornwall, Dryden, Sturgeon Falls, Strathcona, and Iroquois Falls. In Quebec, where the industry still reigns supreme, expansions have been made by companies operating at Chandler, Grand Mere, Quebec, Clarke City, Crabtree, Kenogami, Three Rivers, East Angus, Shawinigan Falls. Renewed interest was exhibited during the year in the industry in the Maritime Provinces and new developments occurred in New Brunswick at Glen Falls, at St. George and Andover, whilst in Nova Scotia a new pulp mill was erected at Wolfville and extensions for additional output made to the one operating at Bear River. Great interest was evinced in the pulp supplies of British Columbia during the year, the results of which have not yet all shown, but will doubtless be revealed in the coming years in the increasing importance of this province as a pulp and paper producing region. There were developments during the year on Vancouver Island and at Prince Rupert.

\$265,000,000 Invested

Owing to the tremendous development the pulp and paper industry has undergone in the past few years, it is a most difficult matter to keep record of figures of progress. The statistics of a survey conducted at the end of 1919 by the Dominion Bureau of Statistics will give some idea of its status, allowance being made for the considerable expansion of the year 1920. At the end of December, 1919, there were 99 plants, of which 33 made paper only, 39 pulp only, and 27 pulp and paper. The amount of money invested in the industry was \$264,581,300, divided amongst the provinces as follows:—British Columbia, \$32,030,063; New Brunswick, \$11,960,778; Nova Scotia, \$1,208,255; Ontario, \$95,281,040; Quebec, \$124,101,164. There were 25,291 male employees and 1,274 female employees in the industry receiving in wages and salaries the sum of \$32,323,789. The value of woodpulp production for sale that year was \$48,562,088, and of paper production, \$91,362,913.

Canadian Films in Europe

The use to which Canadian films have been put in Europe by the Canadian Government and Canadian railroads is extensive. It takes us back fifteen years when the film was far from the perfect creation of to-day, and consisted of films and lectures combined with "stills." The campaign covered practically the whole of the United Kingdom to the most remote agricultural districts and drew great crowds of people, many of whom are now amongst the prosperous farmers settled in different parts of Canada.

At exhibitions on the continent as well as in Great Britain, special features have been made

of Canadian films, places where this has been done including the Festival of the Empire, the Crystal Palace, the Glasgow Exhibition, the Ghent Fair—all prior to the war—and the Lyons Fair and Paris, since. The astonishment of the French people at evidences of industrial development and scenic attraction was apparent as the films were unreel before them. Incredible as it may seem, many yet thought Canada a land of eternal ice and snow, inhabited by Indians and Esquimaux, who gained their livelihood by fishing and trapping.

An Educational Feature

During the war, as every overseas man knows, many opportunities arose for the display of Canadian films at training camps in England and base rest camps in France. Among notable displays given recently, was one before an audience of over 2,000 people at Manchester; another at Westminster before 2,500, etc. The latter included parties of school children and teachers organized by the London County Council and other educational authorities. The extraordinary success of the picture depicting the tour of H.R.H. Prince of Wales through Canada, which was shown at the Royal Albert Hall before the King and Queen and audience numbering over 7,000, created a most lasting impression. Similar displays were given in Glasgow, Manchester, Liverpool, Bristol, Cardiff and Birmingham. The complete film was then taken over by one of the large renting exchanges, who have carried its extensive circulation throughout other parts of the Empire.

It is excellent testimony to the class of films produced by Canada that at the present time, many leading picture houses in different parts of the world are regularly introducing Canadian films in their daily programs.

Canadian Tobacco Industry

All evidence tends to indicate that the tobacco industry in Canada is steadily developing into an activity of first importance, and yearly achieving a more extensive popularity.

Various factors are contributing to this gratifying state. Tobacco growing in Canada is no longer an experiment, but now has years of proven success behind it, and the assured adaptability of widely separated sections of the Dominion to its cultivation. The protective duty imposed on all foreign leaf tobaccos gave a healthy stimulus to the industry. The home market is steadily increasing, whilst not a little interest has been exhibited from abroad in the Canadian produced leaf. F. Charlan, chief of the tobacco division of the Federal Department of Agriculture, who went overseas to study the tobacco market conditions, stated on his return that British tobacco importers, including some of the largest cigar and cigarette manufacturers, were keenly interested in Canadian tobacco growing and anxious to purchase the cured Canadian product.

The growing interest in the cultivation of tobacco, and the wider and more diversified field covered in 1920, resulted in the production of an excellent crop, a record one for the Dominion in this culture. With the smaller

acres not included in the government returns, the total tobacco crop of Canada for the year must be in the neighborhood of 50,000,000 pounds with a value of more than \$13,000,000.

Ontario and Quebec Principal Producers

Ontario and Quebec are the principal tobacco growing provinces of Canada, though the Okanagan district of British Columbia is fast assuming an important position, and the irrigated districts of Southern Alberta have concluded successful years of experiments which will no doubt be followed by a certain amount of commercial cultivation in these areas.

In Ontario, in 1920, the total production of the flue-cured or Bright tobacco for all counties and townships was 2,259,100 pounds, and the total of White Burley, 19,429,400 pounds. The grand total shows that the 1920 tobacco crop of Ontario, including all varieties, amounted to 21,688,500 pounds, which is the largest crop ever grown in Ontario. In 1919 the total provincial production was 17,000,000 pounds. Bright tobacco in this province is grown in the counties of Essex and Norfolk, and White Burley in Essex, Kent, Elgin, Norfolk, Brant, Lambton, Middlesex, Prince Edward, Welland, Haldimand and Oxford. A total of 3,009 acres was devoted to the cultivation of Bright variety, producing 2,260 pounds, and 17,105 acres to White Burley, yielding 19,429 pounds.

Quebec the Premier Grower

Quebec is the premier tobacco province of the Dominion, and in the year 1920 it is estimated that 33,000 acres were given over to the culture. The average yield per acre was 800 pounds, representing a total harvest of 26,400,000 pounds. The total production of 1919 was 16,790,000 pounds from 22,360 acres under cultivation, which shows a handsome increase in both the acreage devoted to growing tobacco and in the year's production. The gratifying success which has for years attended tobacco culture in the French-Canadian province has resulted in a steadily growing interest and extended acreage, which is more clearly comprehended when it is noted that in 1911 there were only 12,134 acres in the province devoted to tobacco cultivation, and in 1920 an increase in acreage of 11,000 acres.

In the counties of Berthier, Joliette, L'Assomption, Montcalm, Portneuf, Richelieu, Rouville, Terrebonne, Vercheres and Yamaska the industry is carried on on a very large scale and is yearly increasing in its revenue-producing importance to the farmers of those sections. In one county a co-operative society has been established for the promotion of the industry with a large warehouse for the care and sale of tobacco; this association sells annually from 500,000 to 600,000 pounds of locally grown tobacco.

Though the tobacco crop of British Columbia seems insignificant when compared with that of the Eastern provinces, the culture in this area is of much more recent origin, and is as yet confined to that territory about Kelowna in the Okanagan Valley. Fifty-two acres in this region were devoted to tobacco growing in 1920, which produced a yield of 60,000 pounds. This shows a decided falling off from the acreage and production of 1919 when eighty-one acres produced 93,000 pounds. All of the 1919 crop was sold to a Quebec manufacturer at 20 cents per pound, whilst the latest report is that the greater part of the 1920 crop is still in the growers' hands. In the favorable growing season of this province, excellent tobacco seed can be produced.

Growth of Popularity of Product

The clearest evidence of the growth of the popularity of tobacco growing in Canada is seen in a comparison of the three last years, 1918, 1919 and 1920, in which the average productions per acre were respectively, 1,062 pounds, 1,069 pounds, and 905 pounds. In 1918 there were 13,403 acres producing tobacco which yielded

14,232,000 pounds; the 1919 yield from 31,586 acres was 33,770,000; and the 1920 crop of 48,088,500 came from 53,114 acres. This takes into account only the main crop coming from the provinces of Quebec and Ontario.

The tobacco manufacturing industry of Canada is mainly confined to the province of Quebec where it is to be found thriving in many parts. A good deal of the Ontario tobacco crop finds its way for manufacture to Hamilton, Walkerville and London, whilst the centre of the British Columbia industry is the town of Vernon. A notable event of 1920, in the tobacco industry of Ontario, was the establishment of the Canadian Tobacco Growers' Co-operative Company at Windsor which commenced operations this year and is handling 100,000 pounds of dry leaf daily. The corporation gained access to the English markets which are prepared to receive any quantity of the Canadian product, the Dominion's 1920 crop being, they state, of superior quality and to be preferred in manufacture. In Quebec, during the past year, a co-operative move was made when the Allies Tobacco Packers and Growers, Limited, purchased the tobacco concern of the J. M. Fortier Company at Farnham, and in conjunction are operating two farms to raise the raw material. One hundred and twenty hands are employed in this packing plant, with about thirty on the land.

Capital Invested

Though up-to-date figures regarding the tobacco manufacturing industry in Canada are not available, the Dominion Bureau of Statistics survey of the industry covering the industry for 1918 gives the amount of capital invested in the industry at the end of that year at \$23,284,799, and the value of its products, \$37,883,974, leaving it just outside the first twenty Canadian industries. There were at that time 7,897 men and women given employment in its various phases, receiving salaries and wages totalling \$5,338,347. Since this survey was concluded there has been, needless to say, an expansion in proportion to the extension in cultivation.

There would seem to be little doubt that the Canadian tobacco industry has an assured future with a steadily increasing home demand, and the favorable attention of foreign markets. The Canadian government, as the result of its extensive investigation and experiment, is assured of the adaptability of many sections of Canadian land to the culture and the national prosperity to accrue from it. One of its ways of encouraging the industry among Canadian farmers is by the distribution of free seed of several varieties, which is put up in quarter ounce packages, sufficient to plant about two acres to this crop.

Building in Canada in 1920

Building in Canada in 1920 exhibited a gratifying increase over the years immediately preceding it both in residential, business and industrial construction, and indicated a steady insistent movement towards the energetic activities of pre-war years. Building was practically at a standstill during the years of hostilities, due not only to a dearth of labor but a discouraging mounting of prices of all the materials used in construction. An energetic attempt to alleviate the situation was made in the first post-war year, 1919, to meet the enormous house shortage which the situation had evolved, with the result that twice as much construction was undertaken and put through as in 1918, the last year of the conflict. The activities of 1920, though still hampered largely by the high prices which prevailed for construction materials and labor, saw a very large increase in the amount of building

performed which has had some salutary effect upon the acute housing problem which has been serious since the war and the return of the army from overseas.

Construction contracts awarded in Canada during 1920, including all cities, towns, villages and rural districts, amounted to \$255,605,500, comparing with \$189,821,300 in 1919 and \$99,842,300 in 1918. Of this total, \$21,395,000 contracts were awarded in the Maritime provinces, \$54,904,600 in Quebec, \$108,120,800 in Ontario and \$71,185,100 in the Western provinces. The value of contracts in residences was \$54,891,100; business construction, \$86,073,200; industrial, \$64,625,900; and engineering, \$50,015,300.

Construction Below Normal

A review of building in Canada for the past decade reveals the fact that upon the estimated normal increase of thirty-five cities, the amount of construction in the past few years has been considerably below that required. That this is entirely a war condition is made certain by the fact that in 1912, when construction reached its zenith in the ten-year period, it was very much above the necessary normal, and though declining somewhat in 1913, maintained this ascendancy over requisition and did not go below the line of normal increase until 1914.

Though the past two years have witnessed considerable activity in an attempt to get back to the normal amount of annual construction, and the result in the face of the difficulties with which the situation was fraught has been in the main satisfactory, the amount of deferred building in Canada is stated by authorities to be enormous. Many public buildings are needed, Federal, Provincial and Municipal, which have been held up all over the country first on account of the war, and since then on account of the increased cost of construction. A large number of corporations require new buildings, such as stations, offices and hotels. Almost every municipality is in immediate need of building roads, bridges, sewers, waterworks, sidewalks, etc. The housing problem is still serious and the number of houses, apartments, and other residential dwellings required is a very large one, and covers all sections of the Dominion.

The Industrial Outlook in Western Canada

*By John F. Sweeting, Industrial Agent, C.P.R.,
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By the time this article is published the western farmer will be on his land preparing and seeding it for the 1921 crop. The area under summer fallow and fall ploughing is large, and with an open, early season the acreage under cultivation this year should exceed that of 1920.

Already, there is a noticeable change in western business conditions; high prices and

heavy stocks have been replaced by lower prices and smaller stocks and the trader is nibbling at new merchandise—nibbling only because he has the idea that prices may go lower and, therefore, he is not buying to the extent of entire replacement. This is a situation which will rapidly change, and it is apparent that the West is on the eve of an era of prosperity that will extend over the next few years, putting production on a firmer basis than heretofore. The policy of watchful waiting is not entirely one of western promotion; it is applicable to most countries, and each year the same tendency to await spring developments, before commitments of any size are made, is evident.

Evidence of Development Urge

To-day, there is abundant evidence of an expansion desire urge, and enquiries coming from the outside world give promise of much help in both money and people—settlement of prairie lands and development of western resources. Manufacturers in Great Britain, it is noticeable, are studying the possibilities of extending their markets for agricultural machinery and tractors, while textile firms have under consideration the British Columbia coast as a likely spot for branch factories. There has never been a keener desire for information regarding Canada's requirements and power of development than at the present time—the result of a growing knowledge of the potential wealth of Canada through carefully prepared and widely distributed information which for many years has been disseminated by the daily press, periodicals and government and railroad literature in many parts of the world.

Recent investigations indicate that while business is small in volume, it is each day being put on a better basis, with a tendency to all possible repayment of loans, while country collections, if not up to the average, are not in a position that will be detrimental to a continuation of business.

Now, when within a few weeks the real work of the year will commence, the prevailing idea throughout the West is that Canada is on the threshold of a development which will bring with it prosperity not only to those already in the Dominion but to the countless thousands who, during this and the following years, are to make their homes in this country.

Rabbit Farming

The Canadian wilds are fast disappearing as with the rapidity of agricultural settlement the farmer in his northward trend yearly encroaches to a greater extent upon them. Inevitably must game diminish and the number of fur bearers dwindle—at once limiting the sources of the Dominion's meat and fur supply and restricting

its export trade—unless stern measures are taken to protect them.

Conservation is the byword to-day. Steps for the preservation and multiplication of valuable game birds and fur bearers are ceaselessly advocated and encouraged, and one of the greatest aids to this end has been the extensive establishment over the Dominion of domestic fur ranches. These have come now to include not only foxes, but muskrats, beaver, skunk, marten, and fisher. In the extreme north, future supplies of meat of an almost illimitable extent are being nursed and built up in maintaining the herds of cariboo, muskox, and reindeer both at the hands of the government and private corporations.

There is, at the same time, one source of meat and fur production which to the present time has been largely overlooked in Canada and which offers possibilities of exploitation on a commercial scale. This is the cultivation of rabbits and hares. In the rearing of these animals there is a double source of revenue, the meat and the fur. At all large centres throughout the Dominion the meat finds a ready sale at profitable figures, whilst at the Montreal fur sale last year, thousands of rabbit skins, which were shipped all the way from Australia, were placed upon the market and realized satisfactory prices, indicating the opportunity offered to local production.

Canadian Animals Unsurpassed

The raising of rabbits and Belgian hares has never gained a really secure footing in Canada probably on account of a lack of appreciation of the profit to be derived from the pursuit, but also, undoubtedly, because the larger phases of agriculture have made a greater appeal, to the exclusion of the smaller branches offering smaller but surer compensation. It is an old and profitable industry in England, and before the war Belgium was earning from ten to twelve million dollars a year from this source. Australia exports thousands of the little animals to England each year where fur and meat are alike utilized and consumed. Authorities state that Belgian hares raised in Canada have no superiors in the world, and that the only genuine Rufus Red Belgians are, at the present time, raised in England and on the American continent.

There is an opening for the industry in Canada both as a side line or as a whole time pursuit, and an engagement in this necessitates neither arduous labor nor an extensive devotion of time whilst ensuring a healthy revenue. Suburban dwellers can follow it on a small scale with profit, whilst those devoting their entire time to it can secure from five to ten acres adjacent to any of the larger centres which are the natural markets for their product. There is not the long waiting for development conse-

quent upon the initiation of other branches of farming.

An Economic Enterprise

One of the greatest inducements the industry holds out to those of small capital is the economic cost of its commencement and operation, the smallest of outlays only being entailed. The expenditure on raising and feeding is low, there being no expensive housing or apparatus, and the food being of the simplest. In the case of animals being raised on a small scale, it is possible to support them almost entirely on the refuse of the kitchen; for the small ranch the cost is not much more as the little creatures thrive on vegetable cuttings, carrots, beets and cabbages. The ordinary summer feed is carrots and clover with a little grain.

There is a ready market in all parts of the Dominion for both the meat and the skins. Rabbit meat is highly palatable and nutritious, containing eighty-three per cent nitrogen or more than either pork, mutton, beef or chicken, and is coming into ever greater favor on the continent. The fur markets of the world dispose of millions of rabbit skins yearly to make their appearance later as electric seal or under some other name. Last year, one Montreal company imported more than 600,000 rabbit skins from Europe.

The first Canadian exhibition devoted exclusively to rabbits was held in Montreal in March this year, and the splendid specimens entered, numbering 250, and the visitors which exceeded 2,500, augured a great interest in the industry. There was an excellent exhibit of raw and dressed skins by local manufacturers, the most noticeable being a collection of "Sealins" (made from rabbit skins) and samples of skins dyed and tanned.

Across Canada—Vancouver

Some men who pride themselves upon their instinct in forecasting national development have prophesied that in course of time the largest and most influential city of Canada as well as the most important seaport on the whole Pacific coast will be Vancouver. These predictions they base on the nature of the Dominion's phenomenal growth with its Pacific city as the gateway to all the Orient and the Australasian continent, in which direction, as well as by way of the Panama canal, more trade is tending every year. Vancouver is the natural outlet for export for a large part of the Dominion as well as for her own fair province, which contains a great and varied aggregation of wealth which is being exploited and exported to a greater extent each year.

Emphatically a city of the present, or perhaps in greater truth of the future, Vancouver has its link with romantic history in bearing the name of the naval commander who discovered its site in 1792, and whose two small vessels, in which

the explorer and his intrepid crew made the voyage, became the forerunners of the countless giant freighters to come up the Straits of Juan de Fuca and Georgia to carry away huge stores of wheat, lumber, minerals, fruit and paper pulp.

The dense heavy timber which skirts the coast perhaps first induced exploitation and settlement, and to the creation of lumber mills Vancouver owes its industrial birth whilst the shipment of their products brought about its development as a port. The steel of the Canadian Pacific Railway reached it in 1886 when it became incorporated as a city, achieving a prestige which it has steadily increased ever since.

An Unrivalled Location

The city has a setting of beauty and utility. Located on the Strait of Georgia, amid the unrivalled scenery of the Pacific coast, and sheltered by Vancouver Island, it has an even temperature in which ice and snow are practically unknown. In its possession of fine streets, handsome public buildings, parks and open spaces, it compares favorably with any city on the continent. It has a population of 180,000. Four steam railways and an electric line radiate from it providing a thorough service to all parts of America, whilst regular steamer sailings are established to Japan, China, Australia, New Zealand, the Philippines, Victoria, Prince Rupert, Nanaimo, etc.

The industrial life of Vancouver centres about Industrial Island, a reclaimed body of land in False Creek, forty-two acres in extent, and a hive of throbbing commercial activity. The project of reclamation in the heart of the city's business district was undertaken and completed by the government, under whose control it is still managed. Industrial sites there have dockage for deep-sea vessels, railway trackage, electric light and power, water and gas supply and sewerage. Industries located comprise nearly every phase of manufacture including ceramics, paint, glass, cement, bricks, steel, boilers, engines, and ship machinery, fish canneries, pickling and bottling, water power wheels, roofing, refining, talc products, sheet metal, ventilating and blowing equipment, hide tannery, electric switch fuses and fixtures, saws, carbolic acid gas, aerated waters, etc.

On the north and south banks of the creek the lumber industries have their giant plants, and the shipyards are busy on contracts from all parts of the globe. Here too steel and metal furnaces are to be found engaged upon an industry which is assuming important proportions on the Pacific coast.

A Deep-Sea, All-Year Port

Vancouver as a port can compete on equal terms with any on the Pacific Coast, whilst improvements are under way to vastly increase

its accommodations and facilities, this comprising among other innovations the construction of two new piers at a cost of \$6,000,000 each. Its importance as an export centre is growing continuously and ships from all maritime countries are to be seen in its harbor.

In the year 1920, its exports to the United States alone totalled \$53,000,000, of which more than \$11,500,000 was made up of minerals, \$10,000,000 of pulp and paper, and the balance of lumber, shingles, canned fruits, and fish.

Vancouver is yearly finding greater favor among foreign countries as an outlet for capital which is reflected in the fact that United States financiers and business men have invested more than \$200,000,000 in developing the latent wealth of the province, the greater part of which is contributory in some manner to the coast city, whilst the amount of British capital exceeds this. A total of 722 new companies were incorporated in British Columbia during 1920, the majority of which were tributary in their activities to the growth of the city.

Vancouver is in an enviable position with a future of commercial and national importance in her many natural advantages and at the hands of her progressive people. With the expansion of the Canadian west, she should experience a corresponding development as their port of outlet, a growth the extent of which is indicated in her short history.

Immigration State by State

In the year 1920, the United States contributed to Canada's population a total of 48,866 new citizens, of whom it may be fairly estimated the major portion went on farms. For although immigration to the Dominion from the United States has fallen off heavily from the figures of pre-war years, due to the disturbed conditions prevailing throughout the years of hostilities and the readjustment of the post-war period, those closely in touch with the situation declare that it is classes other than the agricultural that have effected the decline and that Canada is attracting as many United States farmers to her fertile lands as she ever did.

This statement would seem to be borne out by the records of homestead entries on the part of United States citizens, and the numbers who in the past few years have purchased privately owned lands or improved farms. So, although Canada has perhaps reason for regret in that she is not getting from the United States the quota of citizens she had become accustomed to, after all what the Dominion primarily has urgent need of is agriculturalists, and she has cause for gratification in the evidence that the flow of these is maintaining its volume.

A citizen who comes from across the border to make a new home in the Dominion is broadly regarded by the Dominion authorities and the

public merely as an immigrant of the United States. Eliciting information on his native state is a matter of curiosity rather than of revelant bearing, and not a great deal of attention has been given to ascertaining what states are the principal contributors to Canada's population, nor is it realized what interest such a survey holds or what an economic value it might contain. Such a contemplation is replete with food for speculation and deduction and abounding in matter which may be in the nature of a surprise to those not closely acquainted with immigration matters.

Michigan sent most Emigrants

How many people, for instance, even after lengthy cogitation, could determine what state of the Union sent most emigrants to Canada in the year 1920? The only rough points which would appear to aid in a basis of estimation are proximity to the border and the primary and preponderate importance of agriculture as a pursuit. Yet bearing these points in mind, how many would say Michigan? For, in the year 1920, this state led in the quota of the United States human contribution to Canada with a total of 7,583 persons.

This conclusion perhaps follows more or less along the lines of logical reasoning, but not a man in a thousand would give the second place in the list to the state of New York. It is a popular creed that a New Yorker is always a New Yorker, that the huge metropolis attracts but never discharges, the whirling existence and bright lights creating a microcosm which suffices to the exclusion of the rest of the globe. Yet this city and the territory of the state throbbing round it was second in contributing citizens to Canada, donating a total of 4,068.

Residents of the Pacific coast State of Washington are proud of their climate and the wonderful producing quality of their soil, yet last year 4,055 of them found something of greater interest in Canada and crossed the border to make new homes.

Every other farmer one encounters in the Canadian west seems to have come from a farm in Minnesota or the Dakotas, and most people would have guessed Minnesota as possibly holding a higher place than fourth in the list, with 3,092 persons. However, it is safe to say that practically every one of them was an experienced farmer when he came and by this time has added still more experience along the same line.

Massachusetts in Fifth Place

One would scarcely be inclined to place Massachusetts high among the contributors of emigrants, yet the state which has produced so many eminent literary men achieved fifth place, with 3,820 persons contributed. One naturally wonders what trades or professions they followed.

Northern Montana and Southern Alberta, up to a time not very long ago, constituted one extensive unbroken sweep of range land, and the horses and cattle from each country crossed and recrossed continually without much bothering whose nation's grass they were pasturing on. To some degree the same indefiniteness of boundary exists between the two countries to-day when the range is largely parcelled into farms, and it is but natural that there should be a considerable flow from the older state to the newer province. Montana in 1920 gave 2,780 new citizens to Canada, the majority without doubt being ranchers and farmers.

The trek from North Dakota which brought 2,390 persons to the Canadian west in 1920 is explained on the same reasoning as the trend from Montana and Minnesota, whilst the somewhat more remote agricultural area of Illinois, with whose farmers Canada has steadily and consistently been favored, made a slightly lower presentation of 2,203 new citizens.

Maine, which as a result of the Ashburton Treaty juts into Canada to such an extent that travellers on Canadian railroads to the Atlantic seaboard pass over a large portion of its area, might, from the constant mingling of the two peoples, be expected to consign permanently to the Dominion a larger share than the 1,351 which came in 1920, giving the state the ninth place among contributors.

Ohio and Iowa

Ohio and Iowa farmers are to be found in some numbers throughout the Canadian western provinces where many have attained a height of prosperity farming on their new holdings, and in 1920 these two states were represented by additional contributions of 1,229 and 1,189 respectively. Close behind Iowa was the mining state of Pennsylvania with 1,183 workers lost to Canada's gain.

It would appear to be a general rule, though with several exceptions, that emigration dwindles in numbers with distance from the international border. Idaho, which is next in order, gave 1,055 new citizens to Canada, to be closely followed by New Hampshire with 1,029. The only remaining state contributing above the 1,000 mark is Wisconsin, which, from its proximity to the line and its agricultural fame, we should have expected to see with a larger quota than 1,026.

The border line between Washington and Oregon accounts for a vast difference between the former's generous contribution and the latter's 926. One is generally left with the impression that none would willingly leave the balm and sunshine of California, yet, in 1920, 924 did so to come to Canada.

The little state of Rhode Island sent no less than 691 of its inhabitants to the Dominion; agriculturally famed Nebraska donated little less with 625; and practically the same number, 612,

came from Indiana, completing the quota of the first twenty states.

The remaining states saw their citizens leave for Canada in ever dwindling numbers from Vermont's 497 to the 27 from New Mexico and Mississippi. Agriculture primarily attracted them, and from those states where farming is a leading pursuit they came north to acquire new lands in the desire to expand either for themselves or their growing families.

United States emigration has been an important factor in the past in Canadian development, and it is gratifying at the present day to note the tendency of this exodus to get back to its pre-war proportions.

New Canadian Immigrational Terminal

*By S. L. Cullen, General Publicity Department,
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There has been completed this winter, at the port of St. John, New Brunswick, a new immigration terminal which is claimed to be the most complete immigration terminal accommodation on the North Atlantic seaboard, and provides adequately for the comfort and convenient handling of every man, woman and child who enters this country from European ports.

During the past season from the opening to the closing of navigation, nearly 100,000 passengers were handled by C.P.R. boats alone, 64,000 of whom declared their intention of going on the land. During the winter months of December, January, February and March, 4,000 immigrants have passed through the St. John terminal, 1,187 of whom are classed as farmers, the balance laborers, mechanics, traders, miners, domestic servants, etc.

The difficulties in the past in handling an abnormal passenger traffic have been largely overcome through the installation of this terminal. The superiority of the new accommodation lies mainly in the provision for continuous handling of passengers through immigration, baggage, ticket and other departments without their exposure to weather and other inconvenience in journeying to and fro in unprotected dock sheds. The confusion and delay incident to the prompt handling of quantities of baggage from the largest of ships has now been provided for.

Convenient Handling of Newcomers and Effects

The building is five hundred feet by sixty and has a well covered platform on both sides. Three lines of tracks are located immediately in the rear of the wharf sheds. Baggage is loaded into cars on one side of the shed and passengers entrained from the other, sliding doors being provided at frequent intervals on both. Electric lighted, steam-heated and well ventilated, it is proving a valuable factor in rapid embarkation to waiting trains.

In designing the new immigration quarters, every consideration has been paid to the comfort of the incoming settler. The social side has consideration in the fact that British-born, both men and women, have special dormitories and quarters, and like arrangements and comforts are provided for foreign-born. The interior work throughout the buildings is excellent, the floors in polished hardwood, the walls and ceilings in pedlar metal sheeting, harmoniously painted in two shades of gray.

The result is a building, commodious, comfortable, bright and sanitary.

Debarcation and Inspection

Passengers are landed from the ship's gangway on the floor of the wharf shed through an inclined covered passage-way. In the Immigration Hall separate examination rooms are provided for Canadian and U.S. services. After examination, the passengers emerge into a railway ticketing hall, where tickets can be obtained for Canadian Pacific and Canadian National Railways. Refreshments may also be purchased for the train journey by those who do not wish to make use of dining cars. The passengers then enter another covered passage-way which leads across the tracks at high level and then down an inclined rampway into the middle of the baggage shed. Baggage is brought ashore and placed in the shed before passengers are landed, where it is claimed, examined and checked as soon as ticketing is completed.

The waiting room is filled with wall seats in the form of three sides of a square in each structural bay, and has a seating capacity for three hundred persons. It has toilet accommodation of modern sanitary type and a nursery, fitted with cots and chairs. This is operated by the Red Cross Society and children's food may be prepared on an electric stove. Children's clothes may here be washed and dried in a special rack.

The waiting rooms are sheathed with Douglas Fir, natural finish, and are well lighted with large windows. Emergency exit is provided by means of an inclined rampway to the ground.

The new quarters are reached from an examination room in the upper floor by means of an open bridge across the intervening tracks at high level. The entrance from this bridge is into the large recreation room. In the men's quarters, a large dormitory and a small dormitory are provided for foreign men and a small dormitory for British men, also disinfecting toilet and bath room. The dining room and kitchen are on this floor. A central corridor leads to an emergency exit with a rampway to the ground from the end of the building.

The Women's Quarters

A separate passage-way leads off to the women's quarters. Here are large dormitories

for both British and foreign women, a matron's room, storerooms and an emergency exit to waiting room outside the rampway.

Sanitation is the governing factor throughout the entire plant. The fumigation system is of a modern type, and all mattresses undergo a thorough fumigating after being used once by the waiting traveller. All clothes of the *inconnue* are subjected to the close scrutiny of immigration officials, and a thorough cleansing is carried out in all cases by the modern process.

Ontario Rural Credits

The province of Ontario has decided in favor of a system of rural credits to further agricultural development, and on the movement of the Hon. Manning Doherty, Minister of Agriculture, it has provided for the setting aside of \$500,000 for the purchase of bonds to be issued by the Agricultural Development Board for making long term loans on first mortgages on farm property. Provision is also made for short term farm loans and for the formation of farm loan associations in any township, incorporated village, or unorganized territory in the province of Ontario.

In this movement, Ontario is following the example set by Manitoba where a system of rural credits has been in operation for some years, and has been responsible for loans aggregating \$2,039,000 and the bringing under cultivation of about 66,740 acres of virgin soil. Whilst based upon the Act of the western province, that of Ontario differs from it in some respects.

It is provided that the capital stock of the association shall be made up of one share of par value for each member, and there must be at least thirty members. Subscribers shall be required to pay ten per cent of par value at the time of subscription and the balance when called upon.

A board of seven directors, chosen by the Farmers' organization, the province, and the township, shall pass upon all loans which shall be in effect for the year in which they are issued and may be renewable. The loans will be available for the purchase of seed, feed, implements and livestock and the erection of silos. The rate of interest is not to exceed seven per cent.

Labrador

In territories farther south, considering themselves more greatly favored climatically, Labrador, when thought of, appeals as a Never, Never Land of intense fridity, blizzards and other unpleasant features of a land lying much farther north, and close in upon the Arctic circle.

This vast, almost unknown stretch of Atlantic shore, of which little is known beyond the bare name, suggests Eskimos, reindeer transport, intrepid missionaries, and other phases of an existence common to a hinterland remote from a gentler civilization—but little else. Yet Canada and Newfoundland, both territories of large undeveloped tracts and unexploited resources, have for years had a good-natured dispute as to what exactly constitutes Labrador and where the border line between it and the province of Quebec should come. It is not the mere desire on either hand for the acquisition of territory, but would suggest some intrinsic worth in these thousands of miles of Atlantic coast about which so little is known.

The Labrador coast stretches along the Atlantic from the Strait of Belle Isle, across from the island of Newfoundland, to Ungava Bay, and projects inland for an indefinite distance, this being the point under dispute. Labrador was annexed to Newfoundland in 1783. Ten years later, owing to difficulties arising out of grants made to a number of persons under the French rule, it was changed to Canadian jurisdiction. In 1808, it was again transferred to Newfoundland and has since been attached to that Dominion.

Rich in Natural Resources

It has long been known that Labrador is rich in many natural resources with a wealth of valuable water powers capable of enormous development. Practically no exploitation has taken place of the hidden treasures of this large tract, almost the sole source of revenue of the population being the cod fisheries off the shore, which would suggest itself first as the easiest manner of livelihood. Little attention was paid to the region in other respects until comparatively recently.

The world-wide paper shortage sent manufacturers of the product searching into every nook and cranny for new supplies of raw material for the mills, and not until then was neglected Labrador considered worthy of regard. Surveys were instituted and these disclosed immense resources of timber suitable for paper manufacture. This resulted in applications by promoters to the Newfoundland government for timber limits, and the question of how much of this potential wealth belonged to Canada came up again, and the settlement of the boundary question became a matter of greater moment.

It has been proved by surveys that all of Southern Labrador to 54 degrees South latitude, is a subarctic forest belt consisting of nine varieties of trees. In latitude 55, more than half the country is treeless, but as far north as 58, valleys and lake edges are wooded. Black spruce constitutes 90 per cent of the trees and next to it the more hardy *Larix Americana*.

Labrador's need in development, according to Dr. Wilfred Grenfell, the best authority on that region, is some wage-earning industry such as pulp and paper making would afford. This, in view of the recent interest in the territory consequent upon a universal paper shortage, he is confident of seeing established within a short time. Manufacturers have a precedent to go by in the establishment of mills in Newfoundland by Lord Northcliffe to supply the paper for his English journals.

The Labor Situation

A review of the labor situation for the month of February discloses a decline in the average amount of employment during the month as compared with the previous one, but at the same time a further gratifying decline in the cost of living as illustrated in the figures of the weekly family budget. There was rather more time lost in industrial disturbances than in the previous month but less than in the corresponding month of the preceding year.

In the metals, machinery and conveyances group a decline was noted in the beginning of the month in railway car shops in Ontario and in the shipyards and the crude, forged, rolled and foundry divisions in the Maritime Provinces and Quebec. A recovery was made later in the month with also an improvement in the British Columbia shipyards. In the food, drink and tobacco group, gains were recorded in the confectionery and tobacco industries, but abattoirs and packing houses were somewhat less active whilst there was a temporary closing of some sugar refinery plants. The textile and clothing groups both made marked gains during the month, and in Quebec and Ontario the boot, shoe, hat, cap and garment factories were increasingly active.

General Seasonal Slackness

The pulp and paper industry recorded an average decline in the numbers employed. In the woodworking and furniture groups increased activity in anticipation of the approaching season caused some increase of staffs. The building industry continued, however, dormant, and railway construction was also very slack. Transportation declined steadily during the month. The logging industry entered upon the usual period of inactivity though some camps were opened up in British Columbia. Sawmills generally showed increasing activity whilst mining and quarrying groups continued to decline.

The loss of time due to industrial disputes amounted to 23,547 work days from twenty-two strikes involving 2,624 people. In January, there were only ten strikes involving 964 workpeople, and resulting in a time loss of 15,951

working days, and in February, 1920, twenty-five strikes, 2,345 workpeople and 30,920 working days.

The downward movement in prices continued, lower levels being reached in practically all lines with the greatest falls in grain, vegetables, and textiles. The average cost in sixty cities of a list of staple foods was in February, \$14.08 as compared with \$14.48 at the beginning of January, \$15.77 in February, 1920, and \$7.75 in February, 1914.

The chief decreases for the month were in eggs, butter, bread, potatoes, with slight decreases in some meats, bacon, lard, flour, rolled oats, rice, beans, prunes and sugar.

The Canadian Authors' Association

By Charles W. Stokes.

Canadian authors to the number of over a hundred met in a two-day convention at Montreal last month, and formed a Canadian Authors' Association on somewhat similar lines to the Authors' Society of Great Britain and the Authors' League of America. There is probably something a little unusual in this convention, for literary men are not invariably imbued with too much co-operative spirit; but apart from that, the convention was noteworthy because it advertised to the world the existence of Canadian literature.

He would indeed be a bold man who said that there is no Canadian literature. Canada possesses a magnificent literature; the drawback is that comparatively little of it appears in the first instance in Canada, or is identified with Canada. It is frequently the misfortune of a small country to see its artistic effort absorbed into that of a powerful neighbor. Belgium and Switzerland are familiar instances in Europe; Canada is the principal interest in America. The publishers' lists of the United States are full of Canadian authors.

Amongst them, to select a few outstanding examples, are Stephen Leacock, one of the most popular humorists of the present day, who in private life is a Professor at McGill University, Montreal; Bliss Carman, one of the most artistic of living poets; Charles G. D. Roberts, Robert W. Service, Ralph Connor, L. M. Montgomery, author of that charming story "Anne of Green Gables," Norman Duncan, who wrote "Dr. Luke of the Labrador," and E. W. Thomson, author of "Old Man Savarin." Amongst the popular magazine writers who delight American readers are Basil King, Arthur Stringer, Frank L. Packard, George Patullo, and Agnes C. Laut, all of them of Canadian birth. Sir Gilbert Parker is a Canadian, too, although he publishes more as an Englishman; John McCrae, another Canadian, wrote the most famous war-poem "In Flanders Field."

Some Well-known Authors

There are others, some of whom have not perhaps emigrated, but who are nevertheless equally generally known outside Canada as within—a number sufficiently large to disprove utterly the suggestion that there is no Canadian literature. Amongst these can be cited Peter McArthur, Robert J. C. Stead, J. M. Gibbon, Duncan Campbell Scott, Capt. F. W. Wallace, Marjory Pickthall, A. P. MacKishnie, Alan Sullivan, Sara Jeannette Duncan, and three charming woman novelists, Isabel Ecclestone Mackay, Mrs. Emily Murphy, author of "Janey Canuck in the West," and Nellie McClung, author of "Sowing Seeds in Danny."

There is another distinctive note in Canadian literature—the French-Canadian. The two-and-a-half million Canadians who speak French as their native language have developed a literature of their own, of which the most distinguished figures are the poets Louis Frechette and Octave Crémazie and the historian Sulte.

The interests of the French-Canadian author are not altogether identical with his English-Canadian brother's; but in spite of this the new Canadian Authors' Association starts its existence with a French-speaking section.

The objects of the newly formed Association are to act for the mutual benefit and protection of the interests of Canadian authors and for the maintenance of high ideals and practice in the literary profession; to procure adequate copyright legislation; to assist in protecting the literary property of its members; to disseminate information as to the business rights and interests of its members as authors; to promote the general professional interests of all creators of copyrightable literary material, and to encourage cordial relationship among the members and with authors of other nations. The central office of the Association will be situated in turn in Montreal, Ottawa, Toronto and Winnipeg, for a period of three years in each.

Montreal Selected as Headquarters

Montreal was selected as the first headquarters, largely on account of the French-Canadian section provided by the constitution. This section acts under the general constitution, but is self-governing under a "president de section," and it was thought that Montreal offered the best opportunities for the co-operation of the main association and the French Canadian section.

The following resolutions were passed at the convention:

That in view of the great increase in books and other copyrightable material issued by Canadian Authors, the interests of such Authors would be furthered by the establishment of an Association of such Authors with branches in convenient centres,

the object of such Association being for mutual benefit and protection and for the maintenance of high ideals and practice, and that a Committee be appointed immediately to draw up a provisional Constitution and Bye-laws to be submitted to this Convention for approval.

That vigorous and increasing efforts be made to enlarge the reading public of Canada by the promotion and extension of public libraries and the encouragement of booksellers, and that a Committee be appointed to further such purpose.

That a concentrated effort be made to secure larger attention to current literature from the daily and weekly newspapers of Canada on the ground that the record of human thought as expressed in such literature is of just as much value to Canadian progress as the present extensive records of accidents, murders, hold-ups, political squabbles, municipal scandals, stock movements, baseball scores, small town chronicles, etc., and that a Committee be appointed to further such purpose.

That the Authors of Canada extend a welcome to Authors of other Nations who come to this country either on a visit or for permanent residence, in the belief that all Authors belong to a common fraternity, the members of which are always benefited by becoming better acquainted with one another.

A committee was appointed to take up with the Dominion Government the question of the amended Copyright Bill now before the Government.

The elected officers were: President, Mr. John Murray Gibbon, Montreal; Secretary, Mr. B. K. Sandwell, Montreal; Treasurer, Professor W. S. Wallace, Toronto. Vice-presidents, who represent certain definite districts were elected as follows: Prof. Archibald MacMechan, Halifax; Rev. H. A. Cody, St. John; Professor Stephen Leacock, Montreal; Hon. Thomas Chapais, Quebec; Professor Pelham Edgar, Toronto; R. J. C. Stead, Ottawa; Professor W. S. Allison, Winnipeg; Mrs. Nellie McClung, Edmonton; Mrs. Isabel Ecclestone Mackay, Vancouver; Basil King, United States. The council, with a "President de section" and four members of the French-Canadian section yet to be appointed, consists of Miss Grace Blackburn, London, Ont.; Bliss Carman, New Canaan, Conn.; Warwick Chipman, Montreal; Rev. C. W. Gordon (Ralph Connor), Winnipeg; Miss Lucy Doyle, Toronto; Hector Garneau, Montreal; Mrs. Florence Randal Livesay, Toronto; W. D. Lighthall, Montreal; Miss Agnes Laut, New York; Dr. Geo. H. Locke, Toronto; Mrs. Madge Macbeth, Ottawa; Sir Andrew Macphail, Montreal; Mrs. E. Macdonald (L. M. Montgomery), Leaskdale, Ont.; Louvigny de Montigny, Ottawa; Mrs. Emily Murphy, Edmonton; Frank L. Packard, Lachine, Que.; Miss Marjorie Pickthall, Victoria, B.C.; Lloyd Roberts, Ottawa; Theodore Roberts, temporarily in England; Duncan Campbell Scott, Ottawa; Robert Service, Paris, France; Miss J. G. Sime, Montreal; Arthur Stringer, Chatham, Ont.

The Northern Manitoba Mineral Belt

The discovery of various minerals in Northern Manitoba and activity in one of the most promising of Canadian mineral belts has changed the status and prospect of the middle western province, and from being solely an agricultural province—one of the world's finest farming areas—the disclosure of sources of prospective mineral revenue forecast a future of great industrial importance. Though the industry in this vast region cannot be regarded as other than in the first stages of development, and has been hampered by its remoteness from settled areas and the need of transportation facilities, every month has had something to reveal in the way of new discoveries, and much progressive work has been undertaken and completed. The value of minerals produced in Northern Manitoba in 1919 amounted in value to \$654,633, whilst production for 1920 is estimated by Commissioner Wallace of that territory at around \$600,000.

Approximately three-fifths of the total area of Manitoba is pre-Cambrian, a formation which in Ontario gave rise to development at Sudbury, Cobalt and Porcupine. There was little prospecting in Manitoba before 1912 when the Rice Lake camp was opened up, and the Hudson Bay Railway gave access to the mineral areas of the northern part of the province. Successful prospecting has since that time been carried on over a wide area, the most noticeable districts of which are The Pas belt and the Rice Lake area.

Development at The Pas

Since 1915, development has been rapid in The Pas mineral belt. Twenty million tons of low-grade copper ore have been explored by diamond drilling at Flin Flon Lake and are now being actively developed. High-grade copper is being exported from Schist Lake to the smelter at Trail, B.C., and more than 7,000,000 pounds have already been realized. Other copper prospects are under development, and the prospected building of a smelter at Flin Flon will lead, it is expected, to the establishment of a large copper industry. Gold is now produced at Herb Lake, and active underground development work is being carried out in four other regions.

During 1920, development work in The Pas mineral belt was confined mainly to the western and eastern ends. There was considerable diamond drilling at Copper Lake, a good deal of interest aroused over gold discoveries at Elbow Lake, an amount of prospecting done in the Reed Lake territory, and active exploration work was carried on in the Flin Flon ore body by the

Longyear Exploration Company for the Thompson interests. Production of the Mandy Mine which went through the Trail, B.C., smelter totalled more than \$2,000,000 in copper, gold, and silver. There was a small production of gold from the Rex mine and trial-mill runs from the Northern Manitoba and Bingo properties. As far as copper development is concerned in particular, there has been a tendency to await railway facilities consequent upon the operation of the Flin Flon property before any very considerable expenditure of capital is made on other copper properties. Extensive exploration has satisfactorily established the fact that there is an ore body of very large dimensions in the Flin Flon deposits which will become increasingly important to the Province of Manitoba.

Active Prospective Program

The development of the Northern Manitoba mineral area in 1920 can be considered as satisfactory in the face of the general situation, and, whilst production may not have reached startling proportions, results have been achieved which cannot be estimated statistically, in the amount of good publicity received and the influential interests aroused. The visit, for instance, of members of the provincial legislature to the Flin Flon promises to show good results, for the trip was to these men a wonderful revelation of the possibilities of development in the north of their province. Full development and production from this rich mineral belt cannot be attained until adequate railroad facilities have been provided.

Canada's Expansive Fisheries

Among the first of Canada's assets, in the shape of the tremendous natural resources which have been lavished upon her, are her fisheries.

Canada possesses the most extensive fisheries in the world, and the abundance, quality, and variety of their products are unexcelled. The coast line of the Atlantic provinces from Grand Manan to Labrador, not including lesser bays and indentations, measures over five thousand miles, whilst the sea areas to which this forms the natural basin embrace: the Bay of Fundy, 8,000 square miles in extent; the Gulf of St. Lawrence, fully ten times that size; and other ocean waters aggregating not less than 200,000 square miles, or more than four-fifths of the fishing grounds of the North Atlantic.

The Pacific coast of the Dominion measures seven thousand miles long and is exceptionally well sheltered for fishermen. Throughout the interior of the vast Dominion, from coast to coast, is a series of lakes which together cover 220,000 square miles or more than half of the

fresh water of the globe, Canada's share of the great lakes of the St. Lawrence basin amounting to 72,700 square miles. Then, if further resources were wanting, there are the countless rivers, creeks and other streams in practically all cases teeming with many palatable fish.

Many Varied Species

The fertility of Canadian waters is evidenced by the fact that the entire catch of salmon, lobsters, herring, mackerel and sardines, nearly all the haddock, and a large portion of the cod, hake, and pollock landed are taken within ten or twelve miles from shore. The most extensive lobster fishery in the world is carried on along the whole of the eastern shore of Canada whilst excellent oyster beds exist in many parts of the Gulf of St. Lawrence, notably off Prince Edward Island.

The commercial fishes taken inshore on the Atlantic are cod, hake, halibut, pollock, haddock, herring, mackerel, alewives, shad, smelt, flounder and sardine.

The salmon fishery is the predominant one on the Pacific coast, though a very extensive halibut fishery is carried on in the Northern waters of British Columbia. Herring is also found in great abundance off the Pacific coast and provides a plentiful supply of bait for the halibut fishery. The lakes and rivers all over the vast area teem with whitefish, trout, pike, pickerel, perch and tullibee.

The fisheries of Canada are among her first exploited assets, and the fishing industry is of a staple and continuous nature providing at all times, with very little fluctuation, employment for a vast army of people, and supplying an important export market.

Canadian fisheries produce in all about \$50,000,000 annually and give employment to between 80,000 and 100,000 persons. About 70,000 people are engaged on the sea fisheries, the inland, freshwater fisheries, employ about 10,000, whilst approximately 20,000 persons find employment in canning, curing, and otherwise dealing with the product for the market. In 1920, the fish products of her two coasts netted to Canada the sum of \$26,153,844 and in the previous year the catch from the inland waters was worth \$4,314,952.

Canning and Curing Plants

There were 928 fish canning and curing establishments in operation in the Dominion at the end of 1919, with 18,356 employees receiving wages and salaries totalling \$4,257,811. The total value of the products of these plants in that year was: fish marketed for consumption, fresh, \$4,667,041; canned, cured, or otherwise prepared, \$27,505,712. The value of materials used in

these establishments amounted to \$19,329,966. Subdivided these canneries are found to be: 520 lobster canneries; 1 sardine cannery; 13 clam and other canneries; 76 salmon canneries; 10 whale oil and fish oil factories; and 308 fish curing establishments.

It is stated that edible fish in Canada comprise six hundred different varieties of which only about one hundred and fifty are known, whilst hardly more than twenty have become really important factors on the market. The lack of knowledge as to the food values of many of these fish is resulting in a lamentable wastage of regrettable proportions, as well as a loss of considerable revenue to Canada. A good deal of work has been done by the Dominion government and others to increase this knowledge and to popularize in diet the use of more fish, some varieties of which are stated to be almost the equal of beef.

Though the fishery resources of the Dominion of Canada can be said to have been barely tapped as yet, the same fields are being continually exploited and it is the constant care of the government that these grounds shall not become depleted or exhausted. To safeguard this a valuable work is performed by the Government Fisheries Branch in conducting experimentation and investigation, and most of all in restocking these waters.

There are nearly fifty hatcheries producing young fish to replenish the lakes and streams and the commercial fishing fields of the Atlantic and Pacific. In one year these hatcheries were responsible for putting back into the waters the equivalent of 985,024,250 fish.

Unexploited Waters

If the waters of Canada generally known and exploited are only at the present time tapped, what can be said of the enormous resources of the Dominion which up to the present time are practically unexplored. In the Hudson's Bay and along the Arctic coast are fisheries whose potentiality can be only a matter of rough estimate, but whose waters in future years, with the expansion of the Dominion, will inevitably become a fruitful source of food to Canada and her export markets. The waters of British Columbia too, according to experts, contain many valuable varieties of fish which up to the present time are unmarketable because people have not been educated in their food values.

This lack of fish knowledge is also forming a handicap in the development of the branch of the industry interested in canning, curing, and putting up fish for the market. The ignorance of food values is responsible for an extensive wastage in the discarding of many varieties of fish which could be utilized.

The fish canning and curing industry offers opportunities for initiative.

British Columbia's Merchantable Timber

Writing in a recent number of the *Canadian Forestry Journal* on the "Maintenance of British Columbia's Forests," the Hon. T. D. Pattullo, Minister of Lands, says:

How much merchantable timber have we? This question is being asked to-day the world over. While I write, an Imperial Forestry Conference in London, England, is trying to find the answer, so far as the British Empire is concerned.

To the south of us, State Foresters and timber experts are seeking to provide Congress with an answer to the same question, as well as answers to further questions arising out of the leading query.

There has been considerable controversy in the various trade journals, both as to stands of timber and the best methods of handling them economically. One expert makes an estimate, and another immediately produces widely different figures. That the experts differ is not the important point—that they are both making a genuine effort to arrive at a fair estimate, is the vital fact.

One of the good results of the war is that a general stocktaking of natural resources is going on, and it has been found that this is particularly necessary in regard to timber. After four years of destruction, during which ordinary work was at a standstill, the world is hungry for timber and its products. How long will our visible supply of raw material last? Frankly, we do not know. Fortunately, we are trying to find out.

Reforestation Methods

It has been a habit for years past to think and speak of our timber resources as being unlimited, with the result that we have been mining instead of cropping it, as is done, for instance, in Sweden, where every available stick of timber is utilized. The unlimited supply idea has depleted Wisconsin forests; has left very little timber in Michigan, and is rapidly depleting the stands of the Southern States. It is estimated that the original stand of 650 billion feet in the Southern States has been reduced to 139 billion feet.

There is no occasion for hysteria, but we, in British Columbia, must look facts calmly in the face and lay our plans accordingly. We must, after careful survey, decide on the best methods of timber conservation.

Much is being said these days of reforestation, and extensive experiments along this line are being made by some of the large pulp and paper companies in Eastern Canada. Experts are not agreed that the hope for the future lies entirely in reforestation. They seem inclined to the belief that it will prove rather as an assistance to the forest to reproduce naturally. In other words, that natural reproduction of the species native to each locality is the goal to be aimed at, but that, where necessary, nature should be helped out by artificial means.

In natural reproduction and rapid growth, the coast of British Columbia is peculiarly fortunate, thanks to her moist climate and mild winter. It is estimated that we have 97,000 square miles of productive forest land and that on most of that area, young timber is growing after previous destruction of the crop by fire and logging. While it is true that much of this young forest is at some distance from present means of operation, by the time it has reached maturity, distances will have been shortened, year by year. The important point is that the timber is there, while it is equally important that it should remain there.

Departmental Publications

Any of the following publications will be sent free on request.

Alberta, Saskatchewan and Manitoba.—A descriptive statistical booklet on the three prairie provinces with full information on the West.

The Park Lands of Central Alberta.—Descriptive of the area tributary to the Calgary and Edmonton line of the Canadian Pacific Railway in Alberta. History, description of soils, development, lands open for settlement, and information for settlers.

Irrigation Farming in Sunny Alberta.—Full description of Alberta's irrigated lands, their progress, production and possibilities.

Improved Farms in Eastern Canada.—Lists of unoccupied farms in Ontario, Quebec, New Brunswick and Nova Scotia, together with area, adaptability and prices.

Business and Industrial Opportunities in Western Canada.—Full listings of industries existing and business openings in the provinces of Western Ontario, Manitoba, Saskatchewan, Alberta and British Columbia.

Canadian Pacific Reserve Farm Lands in Lloydminster and Battleford Districts.—Information of Canadian Pacific lands in these districts, history, farming information, progress, and possibilities.

Canada's System of Government.—Canadian government briefly outlined to portray its democratic traits.

The Story of Canadian Nickel.—History of the nickel mining industry.

Canadian Oil Exploitation and Prospects.—An expert engineer's history of Canadian oil development and future possibilities.

Canadian Water Power Development.—Authoritative and exhaustive survey of water power reserves and possible development.

Paper Pulp from Flax Straw.—An investigation engineer shows the possibility of the development of a new industry in the West.

A Canadian Grain Handling Plant.—How Canadian grain is stored and shipped. Authoritative article on Canadian elevators.

Value of a Settler to Canadian Railroads.—Computation from reliable statistics of a farming settler's revenue-producing worth to Canadian railroads.

Bituminous Sands of the Athabasca Region.—Description with known values, and possibilities of development of the widely known tar sands of Northern Alberta.

The New Canadian Oil Field.—Dealing with the Arctic oil region of the new strike.

Water Powers of the Maritimes.—Authoritative article on the undeveloped power systems of the Eastern provinces.

Water Powers of Manitoba.—The water powers of this province dealt with exhaustively.

Oleomargarine.—History of oleomargarine in Canada and its future prospects.

Synopses of Natural Resources.—Forty-five pamphlets dealing briefly but concisely with Kaolin or China Clay, Oil Shales, Mica, Fluor-spar, Asbestos, Molybdenum, Magnesite, Fruit, Flax Fibre, Nickel, Coal, Clays, Salt, Copper, Zinc, Silver, Gold, Pyrites, Iron, Potash, Talc, Feldspar, Platinum, Phosphate (apatite), Manganese, Graphite, Cement, Barytes, Gypsum, Irrigation, Petroleum and Natural Gas, Corundum, Sulphates of Sodium and Magnesium, Timber and Pulpwood, Fish, Fur, Peat, Grazing Lands, Mineral Waters, Building and Ornamental Stone, Whaling, Sealing, Wheat, Oats and Barley, and Water Powers.

The Department of Colonization and Development

The Department of Colonization and Development has the following offices established in the United States, Great Britain and Europe, whose representatives, at any time, will be glad to furnish information regarding Canadian agricultural, industrial and commercial enterprises.

MONTREAL, P.Q.	E. G. WHITE, Supt., 335 Windsor St. Station.
WINNIPEG, Man.	J. F. SWEETING, Industrial Agent, Canadian Pacific Railway.
CALGARY, Alta.	M. E. THORNTON, Supt. U.S. Agencies, Ninth Ave. and First St. East.
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or any agent of the Canadian Pacific Railway Company or Canadian Pacific Ocean Services, in United States, Great Britain, or Europe.

J. S. DENNIS, CHIEF COMMISSIONER,
Department of Colonization and Development,
Canadian Pacific Railway Company.

Ask the Canadian Pacific about Canada



Agricultural and Industrial Progress in Canada

A monthly review of Agricultural and Industrial progress in Canada, published by the Department of Colonization and Development of the Canadian Pacific Railway at Montreal, Canada.

VOL. 3—No. 5

MONTREAL

May, 1921

Canadian Revenue and Expenditure 1920

THE preliminary statement of revenue and expenditure of the Dominion Government for the fiscal year ending March 31st shows an increase in revenue of \$70,533,522 and a like increase in expenditure of \$16,634,610. The revenue for the twelve months reached the high figure of \$451,366,029, compared with \$380,832,507 for the previous year, while a comparison of the two years' expenditure is \$357,515,278 for 1920, and \$340,880,668 for 1919.

Records for the past year show a decrease in both excise tax and customs, as well as a similar

there were accounts charged to capital on war account, for railways, canals and public works amounting to \$48,316,807—a heavy decrease over the previous year's figures of \$388,213,018.

Consolidated fund and capital expenditure together show a total outlay of \$405,832,085, a decrease over previous year's figures of \$323,261,601. Direct war payments are steadily coming down, and though it may be some years before they are closed, they will rapidly continue to decrease. The year just closed shows revenue exceeding expenditure by the sum of \$45,533,944. The figures are preliminary, however, and the

REVENUE AND EXPENDITURE—FISCAL YEAR 1920-1921

Customs taxes	\$162,812,951
Excise taxes	36,699,473
Post Office	23,998,409
Works, Railways and Canals	38,873,833
WAR TAX REVENUE:	
Inland Revenue	76,441,812
Business Profits Tax	37,601,511
Income Tax	38,814,496
Other War Tax Revenue	1,806,621
Other Revenue Accounts	34,316,923
Total	\$451,366,029

Interest on Public Department	\$129,118,279
Agriculture	4,746,670
Pensions	35,312,736
Public Works	8,816,176
Post Office	20,348,014
Dominion Lands and Parks	3,645,416
Soldiers' Land Settlement	1,924,978
Soldiers' Civil Re-Establishment	31,796,931
Other Expenditure	121,806,078
Total	\$357,515,278

decline in income from railways, canals and public works; special war taxes, however, more than compensated for this decrease. Expenditure on ordinary account shows the tendency to increased outlays that at the time appropriations were made marked almost every business organization.

As noted above, the increased expenditure of the year just closed exceeded the previous year by over \$16,000,000, and as will be seen from the accompanying table, the outlay on the public debt alone more than accounted for it, being \$29,305,829. Very considerable reductions are manifest in soldiers' land settlement and civil re-establishment, both of which have probably reached their maximum; appropriations for the coming year show further reductions in this connection.

Besides the consolidated fund expenditures,

present apparent surplus may, therefore, be somewhat reduced; even if such is the case, it is unlikely that expenditure will exceed revenue—a fact which will undoubtedly give confidence to all interested in the welfare of the Dominion.

There is no suggestion that taxation will be decreased. Over \$7,500,000 was paid out of the treasury last year for special education, highways, house building, etc., and while the latter may be considered an investment to be repaid, the funds required are raised by taxation or credit borrowings; there is a constant pressure upon Parliament for grants and bonuses in the promotion of industries and resources, calls for higher pay and greater outlays, and, finally, it is impossible to make a sure estimate of what the Government railways are to cost from year to year.

The record receipts represent large payments by a people under nine millions in number.

Agricultural & Industrial Progress in Canada

Published Monthly. Free on request.

It will be appreciated by the Department if editors and writers using matter from this Bulletin will quote source.

Norman S. Rankin, *Editor.*

General Agricultural Situation

*Compiled by J. Dougall, General Agricultural Agent,
C.P.R., Montreal.*

The general situation as applied to the crop outlook for 1921 over all Canada is very encouraging. Rain and snow have fallen generously throughout the Dominion during the month, and the ground is in excellent condition for working.

The price of all farm products is on the down grade, due to the general market conditions. Canada has 26,000,000 bushels of wheat that is for export from 1920 crop, and, generally speaking, it has been disposed of at a fair price. Some of the farmers are still holding for higher prices, but from all appearances they are going to be disappointed, and they are now shipping their holdings.

The reports from the provinces of Prince Edward Island, Nova Scotia and New Brunswick indicate that the acreage in potatoes and roots will be equal to that of 1920. While the market for these products has been very irregular, growers have been able to export to the West Indies this spring to advantage.

Quebec has, so far, done very little, as the season is not sufficiently advanced, and the land is too wet for working. The acreage, however, will be on an average with other years.

In Ontario, the farmers are on the land, and good progress is being made. Seeding is in full progress. Reports show that the fall wheat has come through the winter in favorable condition. Clover has also come through fairly well. Late reports from the Niagara fruit district are to the effect that frosts have done no damage to fruit trees, and the expectation is that the yield will be normal.

The growers have decided to market a large percentage of their crop this year co-operatively, and have formed The Niagara Fruit Growers' Association for that purpose. They will also buy their own supplies through this association.

In the Prairie Provinces the reports are very optimistic. Rains and snow have been general, and the wheat growing belt starts out with conditions exceedingly favorable.

In Manitoba, seeding has commenced and will be general, if the weather permits, by the time this is printed. Cold spells have kept the farmers off the land, but at time of writing, indications are that work will be general shortly.

In Saskatchewan, considerable moisture has fallen over the province and is still falling. Reports from all over the province are that the moisture conditions are good. This means a great deal, as the seed bed is fairly clean, and with moisture below the seed bed the crop should get away to a good start. All indications are that the acreage will be normal.

In Alberta, all reports are that the moisture conditions are good. Rain and snow are continual. Seeding is reported from many districts. Reports state that the acreage will exceed that of 1920.

In British Columbia, reports from the fruit districts are to the effect that the trees came through the winter in good shape, and experts state that a normal yield may be expected.

The live stock situation all over the Dominion is disturbed. The continued agitation for the removal of the British embargo and the possibility of the United States Fordney Tariff Bill becoming law have had the effect of worrying the stock raiser. He is wondering what effect all these questions will have on the market, and is somewhat diffident as to further investment or increasing his holdings until things are settled. Marketing of live stock in the Dominion for 1920 was low, and the outlook for 1921 is not encouraging. Canada will have to find another outlet for her live stock, and probably in the shape of chilled beef. This can be done with the co-operation of the farmers, packers and railways.

Dairy products are in great demand, and although prices are sagging to some extent, yet this very important item from our farms shows the least depression. There is no doubt but that Canada is destined to become a large exporter of butter, cheese and eggs.

Twenty Years' Homesteading

There can hardly be any gainsaying the statement that the biggest factor in the phenomenal development of the Canadian West has been the concession of free land by the Dominion government to farmers and intending agriculturalists who undertook to settle and reside thereon and bring a part of the soil under cultivation. The prospect of obtaining, for a mere incurrence of the most ordinary obligations, land which in settled sections of the continent was valued at hundreds of dollars per acre, and in older European countries was absolutely beyond the purchasing ability of the average citizen, drew thousands of land-hungry men from all over the world to people the vacant plains of the west. In the record of homestead patents is contained the gist of western development, for it was the agriculturalist who came first to really develop and stay, and all else has followed in his wake.

The favor with which free homesteads of 160 acres were regarded is reflected in the early rapidity of settlement within the areas where they were made available, while the diminishing numbers of homestead entries in the past few years indicates the approaching exhaustion of desirable land to be secured by this means. In the last two decades, from 1900 to 1920, more than 500,000 homestead entries were made in the provinces of Manitoba, Saskatchewan, and Alberta, which represents the settlement and fencing off of more than 80,000,000 acres by this system of appropriation. Not all this can, of course, be considered as under cultivation, though the farmer who takes a homestead without additional holdings usually has the greater part of the area rendered productive.

A Survey of Homestead Statistics

United States immigration to Canada has always been regarded in so desirable a light, largely because the majority of those emigrating to the Dominion find their way to the land where the Dominion has the greatest economic need of them, whereas a large section of the British emigration tide flows into the cities and industrial centres. American settlers have, in the past, been possessed of the greatest per capita wealth on arrival in Canada, for which reason a great many have been in the habit of purchasing improved farms and become producing assets to the Dominion without any loss of time whatever. A survey of homestead statistics, however, also reveals the fact that they have constituted the most important single factor in the settlement of these lands, and that in the filing and proving on the approximate 500,000 homesteads of the past twenty years, former United States citizens have been responsible for the settlement of nearly 140,000, or almost thirty per cent. The British Isles, taken together, accounted for about 91,000 entries, divided approximately into English, 67,500; Scotch, 17,000; and Irish, 6,500. This was surpassed by the settlement of continental peoples in general who filed on nearly 100,000 quarter-sections of western land.

The banner year of homestead entry was 1911, when 44,479 applications were received at the various lands offices. Figures dropped somewhat until the outbreak of the war, when in 1914, 31,829 potential farmers from all countries took homesteads. During the fiscal years 1915, 1916, 1917 and 1918, a total of only 60,636 homesteads were taken up, in 1919 only 4,227, in 1920 6,732, and in the first seven months of the last fiscal year, 3,784.

Dwindling Available Homesteads

In the dwindling figures of homestead entries, one observes the reflection of both the wartime cessation of British emigration and the falling

off of the United States annual contribution, and the depleting areas of homestead land in the west. To-day, the luxuriant open tracts of the Peace River Country of Northern Alberta remain one of the few areas which contains large sections of land which may be homesteaded. This favored section has recently been the Mecca of many farmers and many of Canada's ex-soldiers desiring to exercise the rights of soldier grants.

The homesteads of to-day are the rich productive farms of to-morrow, and the homesteads settled upon within the last twenty years are now producing much of the crops and cattle which have made the western provinces famous the world over. They are now netting their owners, in many cases, handsome yearly revenues, and from being secured for the exchange of a ten dollar bill and a few agricultural and residential duties, are held in many instances at values of one hundred dollars per acre. Carefully compiled statistics prove that land in Canada is rising in price at a startling rate. The excellence of crops produced and the rapidity of settlement are in a large measure responsible for this. Homestead land settled to-day will be worth a large figure in a few years, and improved land purchased at the comparatively low prices prevailing at the present time, when compared with those existing in other countries, will within the span of the purchaser's life, realize a price many fold what he paid.

World Winners in Wheat

There is no more startling feature in agricultural history than the sudden rise to prominence as a wheat-producing area of the Canadian North-West. Where but a short span of years ago the buffalo roamed, and where at a little later date pastured huge herds of range cattle and horses, waving wheat fields that stretch from the beholder to the horizon hold the vision, and Western Canada has speedily attained one of the first places among the wheat-producing countries of the globe. This position she maintains not alone in the tremendous output of her fields, which each fall crowds myriad elevators to overflowing and taxes railroad transportation, but in the high quality of her cereal which has given the Western prairies the proud title of the finest producer on the American continent.

It has been generally assumed, and with sufficient justification, that the world's choicest wheat is grown on the American continent. Thus the premier wheat grower of the continent has received the distinction of champion among the world's wheat producers, and his product considered unexcelled the world over. This enviable title Canadian farmers have consistently secured without exception during the past ten years, or from the time when the Dominion first seriously

entered as a competitor against the older grain-growing areas across the international boundary.

If we delve into Western Canadian history, it will be found that this area's fame as a producer of excellent wheat really dates back as far as the year 1876, when the prize-winning wheat at the Centennial Exposition at Philadelphia came from the Peace River Country, a region which as a grain-producing area may even at this date be said to be in the elementary stages of development. Another part of the same territory carried off the first wheat prize in 1893 at the Chicago World's Fair. Western Canada has, however, been a serious and continuous exhibitor and competitor only since 1910, since which time the three provinces of Alberta, Saskatchewan and Manitoba have held the world's championships between them, wresting the prize one from the other on different occasions, but never permitting the premier honor in this respect to pass the boundary of the three.

Seager Wheeler's Rise to Fame

In the year 1910, the late James J. Hill, of the Great Northern Railway Company, offered a gold cup to the value of \$1,000 for the best bushel of hard spring wheat grown in the United States. Sir Thomas Shaughnessy, President of the Canadian Pacific Railway, challenged him to open the competition for the prize to Canada. As he was for some reason unwilling to do this, Sir Thomas, on behalf of the Canadian Pacific Railway, offered a new prize of \$1,000 in gold for the best bushel of hard spring wheat grown on the continent of North America. In 1911, the first international competition was held under the auspices of the New York Land Show, and the prize was won by Mr. Seager Wheeler, of Rosthern, Saskatchewan, now familiarly known all over the continent as the "Wheat Wizard." It is considered that his yield on a small strip of land that year, which worked out at eighty-one bushels per acre, in all probability constitutes a world's record for spring wheat.

In the following year, the prize went over the provincial border into Alberta, being secured by Mr. Holmes, of Raymond. In 1913, it travelled back to Saskatchewan, when Paul Garlach, of Allan, won out against the entire grain farmers of the continent. In 1914, 1915, and 1916, the prize went to Saskatchewan each year, when Seager Wheeler recounted his first success and took America's first place successively. Manitoba's turn came in 1917, when one of her farmers, Samuel Larcombe, of Birtle, won the first prize for his province.

Saskatchewan Produces a New Champion

Seager Wheeler did not relinquish the laurels for long, and at the International Soil Products Exposition at Kansas City in 1918, where he

exhibited his Marquis and Red Bobs wheat, he secured the world's championship again, and successfully contested it the following year. A new champion arose in the same province in 1920, when at the International Live Stock Exposition, held in Chicago, the honor was wrested from Seager Wheeler by J. C. Mitchell, of Dahinda, Saskatchewan, still to stay with the province and the Dominion.

Thus for the past ten years, since which time only Western Canada can be said to have entered aggressively into competition with the older grain-raising areas of the continent, the Western provinces of the Dominion have carried off each year the highest honors for wheat. In one year each has the distinction come to Manitoba and Alberta, Saskatchewan being predominantly first among America's wheat-growing areas with eight grand championships, six of which it owes to that grain genius, Seager Wheeler, whose name is now renowned in agricultural circles the continent over.

It is not long since the suggestion that wheat could be grown at all successfully in the Canadian North-West was met with the profoundest scepticism. Now, Canada has not only assumed third place among the nations of the world in the amount it grows annually, but successfully maintains its claim yearly to superiority of quality over other lands. And in the three Western provinces there are yet thousands of acres of land, of the same fertility, unproductive, due in time to raise the same quality of grain, and swell the production of the Canadian West many fold.

New Brunswick's Fruit Growing

In tabulating the fruitlands of Canada, as commonly known and appreciated, the province of New Brunswick does not feature very prominently, due not so much to modesty in publishing the successes of years as in the realization that they are insignificant in the light of the wonderful possibilities of development the fruit growing industry in the province is capable of. It may be surprising to a great many people to learn that practically all the fruits which thrive on the North American continent can be cultivated with much profit and success in New Brunswick, that the apple is indigenous to the province with wild apple trees lining the roads for miles in many sections, and that in certain favored valleys, largely undeveloped, the province has potentially, according to the most reliable authorities, some of the richest orchard sections in Canada.

New Brunswick possesses all the qualities of soil and climate for successful fruit growing, and all small fruits and a large number of varieties of apples, plums, and pears are grown profitably. Each year the production of the various fruits is increasing, due to the consistent efforts of the provincial government and local fruit associations, who have succeeded not only in encouraging the industry with native farmers following other phases of agriculture, but in inducing much immigration to the orchard-lands.

Fruit development companies have taken up the planning of orchards for sale, and succeeded in systemizing to an extent this side of the industry. The Canadian and European markets are the aim of the provincial fruit growers. The province is admirably situated to serve the overseas market, being in a position to ship the apple crop

by water direct, and being three thousand miles nearer to European ports than the fruit lands of British Columbia, Washington, Oregon and Colorado.

Excellent Color and Quality

New Brunswick apples have a high color and singular quality which is purely individual and distinctive, and which incites commendation wherever exhibited. The Wealthy, Bishop Pippin, Dudley, Fameuse, and Mackintosh Red—all good dessert apples and popular on the English market—are grown to perfection. The Duchess, Wolfe River, Milwaukee, Alexander, and Bethel, also succeed well. There is no doubt about the New Brunswick apple being a favorite on the overseas market, which is always keen and steady, whilst the home market, which exists almost entirely on the local product, is a constantly growing source as urban centres increase and multiply.

The proven apple districts of New Brunswick are in the Upper and Lower St. John River Valleys, and all parts of Albert, Charlotte, Westmorland, and Kent counties. The Lower St. John Valley, acknowledged to be one of the most fertile and beautiful valleys of the world, awaits only systematic development to rapidly blossom forth into one of the greatest apple regions in Canada. The opinions of expert Canadian horticulturalists on the provincial fruit-lands are, perhaps, more valuable in their pithiness than columns of description. The Dominion fruit inspector for Nova Scotia says: "I feel satisfied that the St. John River Valley is destined to become one of the best apple-growing sections of the Dominion." The chief of the fruit division of the federal government gives it as his opinion that "Any man who says apples cannot be grown successfully in the province of New Brunswick does not know what he is talking about." R. W. Starr, a Nova Scotian pioneer in apple-growing, says: "There is no doubt that there are large sections of New Brunswick as well adapted to the growing of fruit, especially of apples, as any other part of the Dominion."

Owing to the undeveloped state under which the industry has been existing, fruit lands can be obtained in the province at low figures. Fruit development companies are taking up the planning of orchards for sale as commercial orcharding. Farms well adapted to fruit growing can be purchased for from \$20 to \$30 per acre, according to location, state of cultivation, and the buildings and improvements thereon. Choice fruit-lands, cleared, ready for planting, are offered at from \$50 to \$100 per acre.

Average Cost of Orchard

The average cost of a 1,000-tree apple orchard until ten years old in New Brunswick has been successfully worked out at \$1,718, and the average income to be derived from this plantation, from the sixth to the tenth year of growth, \$2,250. From the eleventh to the fifteenth year, this rises to \$5,625; from the sixteenth to twentieth year, \$7,500; and from the twenty-first to thirty-fifth year, \$33,750. In the season of 1920 at Douglas, York County, where close calculations were kept, the average profit per acre worked out to \$176, whilst other sections would return much around this figure.

New Brunswick strawberries and other small fruits ripen later than those in the United States and in Ontario and Quebec, and come on the market after the first fruit is exhausted. In 1919, small fruits received at St. John for export were 200,000 boxes of strawberries, 50,000 boxes of raspberries, 50,000 boxes of blueberries, and 1,500 boxes of gooseberries. Whilst large quantities are grown in the St. John River Valley and around Sackville and other towns, the field for this culture is largely undeveloped, and does not meet the export demand. The cultivation of strawberries would seem to be a very profitable venture, judging by the reports of farmers, one of whom makes \$7,000 per year from the cultivation of five acres, and another \$5,000 from three and a half acres. Mr. Wetmore, provincial member to the Legislature for the County of Kings, in speaking before the House, said

that small fruits grown in New Brunswick were in great demand, and that he himself had made as much as \$1,500 an acre from this kind of fruit.

The question of fruit growing is one ever in the fore in government matters, and the authorities are alive to the possibilities in the rich land of the province. The Horticultural Branch of the Department of Agriculture is continually active in promoting the industry by investigation, experimentation, and constantly visiting the orchard sections to aid the farmers at first hand. Twenty-three demonstration orchards have been established in various parts to test varieties and demonstrate what can be done by the best methods of cultivation and orchard practice.

The Interprovincial Weed Special

*By Thos. S. Acheson, General Agricultural Agent,
C. P. Ry., Winnipeg.*

Of all menaces to agriculture in the Prairie Provinces, it is unanimously agreed that the loss sustained from weeds far outweighs the loss from any other preventable cause. Realizing this, the decision was reached by the Provincial Governments of Manitoba, Saskatchewan and Alberta, that if the Canadian Pacific Railway Company would provide the service, a special interprovincial train on weed control would be equipped and sent out.

The Railway Company concurred in the plan, and on the morning of January 24th, the "Special," consisting of two lecture cars, one car for display of implements, another exhibiting growing weeds, etc., and a tourist-dining car, opened at Dominion City, Manitoba, a tour of six weeks—two weeks to each province—to conclude in Southern Alberta the first week in March.

Any pessimism which may have existed with respect to the success of this mission was soon dispelled. From the outset, great difficulty was experienced in handling the large crowds at points visited, and on occasions it was necessary to obtain the use of the local hall in order to accommodate all. This manifestation of interest on part of the farmers greatly encouraged the train speakers, who put forth their best efforts, and received a splendid response with assurance of earnest co-operation.

Travelling Lecture Rooms

The weed exhibit car was a popular centre of interest to both young and old. Here were paintings and living and pressed plants to illustrate the worst weeds; and, with these, companion cards indicating the means of eradication. Many kinds of weed seeds were shown under magnifying glasses, and models enlarged to forty diameters. Soil plots with weeds growing from weed seed planted on the trip indicated the rapidity with which some typical weeds developed when not properly attended to. In these plots the type of implements suggested for the eradication of each type of weed appeared. In

another section, space was devoted to natural history, featuring certain bugs, the grasshopper and the cutworm, each in various stages, with charts showing the methods of destroying them.

The second exhibit car contained various types of machinery employed in connection with weed destruction, seed cleaning, and cultivation purposes generally.

The two lecture cars, which were used for this purpose only, were adorned with placards bearing upon the weed question.

An Experienced Staff

The staff accompanying the train, provided by the Dominion and Provincial Governments, agricultural colleges and schools, included prominent Western authorities on agricultural matters. Through each province either the Minister of Agriculture or the Deputy Minister directed a programme which varied from day to day to suit the prevailing conditions of the district visited. For instance, a district badly infested with the Russian thistle may have also suffered from the grasshopper plague of last year, and these two matters were treated by special authorities instructing thoroughly upon the measures to be taken to combat them. Another district had an abundance of couch grass, or mustard, or the cut-worm had ravaged the crops; each of these received special attention with definite instructions to those affected.

A certain amount of time was taken at each point for the discussion of other agricultural topics, such as winter feeding, growing of corn and sunflowers (much interest was taken in the matter of sunflowers for fodder), clover, alfalfa, and fall rye, also the advantages of having a silo on the farm. The discourses were of such a varied and comprehensive nature that it would be difficult to go into detail, but the writer is satisfied that no other similar train has ever accomplished so much within such a short time. During the six weeks, three thousand, five hundred miles were covered, seventy-four points visited, and seventy-six meetings held, with an aggregate attendance of fifteen thousand, four hundred and eighty people.

The objective of the Provincial Governments was to arouse public sentiment to the seriousness of the weed situation, and it is believed that this has been accomplished and the venture thoroughly justified.

Industrial Outlook in Western Canada

By J. F. Sweeting, Industrial Agent, Western Lines, C.P.R., Winnipeg.

There has been some improvement noticeable in commercial conditions during the past month, with brighter prospects in the near future. The strong revival of trade that was anticipated is apparently not yet due, as buyers are not yet ready to change their attitude regarding further

reduction in prices. The situation has been forced somewhat by shortage of supplies, and commercial travellers tell of steady buying, but in quite small quantities, for immediate requirements.

The situation in the West has not reached the point of "restored confidence," and it is probable that the conditions under which the crop is put in will determine, to some degree, what development will take place with the next few months. At the time of writing, heavy snow-falls and rains throughout the West promise a fine seed bed, and by the time these notes are in print it will doubtless be known to what extent the weather man has been good to the Western farmer. The crop outlook has always been a factor in Western business, and will continue so until the West becomes a larger manufacturing centre than at present.

The writer, who has recently made a business trip to the Pacific Coast and the principal cities of the Prairie Provinces, was met on all sides with expressions of confidence at the very apparent stabilizing of business conditions that were proceeding at a rate which was considered justifiable in view of the reactionary periods which had been experienced during the past years. Complaints were few, orders in large quantities are not a desideratum because of possible break, and apart from any unforeseen political events, the process of evolution appeared to be marching in the right direction—slow and conservative in trend, but gradually bringing into line all interests that count in business.

Programme of Construction

So far as construction work is concerned, more especially in house building, warehouses, factories and municipal works, in Winnipeg and Western points, agreements with constructional workers commence May 1st, and at the time of writing conferences are being held to determine the rates of pay. Much in relation to construction may rest on the result. Lumber prices are down, but many other building materials have not yet shown any great downward tendency. A change in this respect is possible, and, if so, we may yet see an extensive programme, carried out during the summer months.

Farmers from the United States and European points to buy Canadian land will average up well, and prospects for the immigration of new settlers justify an optimistic outlook. There are many enquiries for data regarding proposals to establish branch factories, and new firms are establishing branch wholesale distributing houses.

The West has made its winter journey without disaster of any kind, and while there has been more unemployment than usual, there has been no real distress. Now that spring is opening up under favorable conditions, there would appear to be every justification to expect a good

year in all industrial lines, added to which a prospective heavy crop will bring into being that confidence which has made of Western people such good builders in the past.

The Canadian Pacific Annual Report

The Canadian Pacific Railway Company earned equivalent to 11.4 per cent. on its \$260,000,000 common capitalization for the year ending December 31st, 1920.

This compares with 10.8 per cent. in 1919; 10.97 per cent. in 1918; 15.89 in 1917, and 16.76 per cent. in 1916.

The increase in the percentage, which takes into consideration the inclusion of the special income, is accounted for more by the latter item than by earnings from the railway and lake steamers only, which showed a reduction from the preceding year in which the Company began issuing statements for a fiscal year ending December 31.

Last year, for example, earnings on the common stock, outside of special income, equalled 7.17 per cent.; in 1919, 7.32 per cent.; in 1918, 7.85 per cent.; and in 1917, 11.78. In

1919, earnings from special income equalled 3.48 per cent., against last year's 4.22, the latter incidentally being the largest in the periods mentioned above.

Gross earnings of the railway last year were the largest in its history, totalling \$216,641,349, against \$176,929,060 the preceding year, and \$157,537,698 in 1918. Operating expenses at \$183,488,305, however, showed an almost corresponding increase, and with an increase of over \$600,000 in fixed charges, and deducting the usual \$500,000 pension fund reserve, the balance left for dividend distribution amounted to \$21,877,635, about \$393,891 down from the preceding year.

After dividends, a surplus of \$450,359 was left, compared with \$844,250 the preceding year, and \$2,203,621 in 1918.

Special income at \$10,966,448 showed an increase of over \$1,900,000, and after dividends of 3 per cent. had been deducted and the balance added to previous surplus the present surplus at credit of special income account amounts to \$18,580,292.

Following are the earnings of the enterprise for the past four years:—

	1920	1919	1918	1917
Gross earnings.....	\$216,641,349	\$176,929,060	\$157,537,698	\$152,389,334
Working expenses.....	183,488,305	143,996,024	123,035,310	105,843,316
Net earnings.....	\$ 33,153,044	\$ 32,933,036	\$ 34,502,388	\$ 46,546,018
Fixed charges.....	10,775,409	10,161,510	10,177,513	10,229,143
Surplus.....	\$ 22,377,635	\$ 22,771,526	\$ 24,324,875	\$ 36,316,875
Pension Fund.....	500,000	500,000	500,000	500,000
Balance.....	\$ 21,877,635	\$ 22,271,526	\$ 23,824,875	\$ 35,816,875
*Transferred.....			193,977	
†Transferred.....				1,968,683
Preferred dividends.....	\$ 21,877,635 3,227,276	\$ 22,271,526 3,227,276	\$ 23,630,898 3,227,276	\$ 33,848,192 3,227,276
Common dividend.....	\$18,650,359 18,200,000	\$19,044,250 18,200,000	\$20,403,622 18,200,000	\$ 30,620,916 18,200,000
Net surplus for year.....	\$ 450,359	\$ 844,250	\$ 2,203,622	\$ 12,420,916

*Net earnings commercial telegraph, January and February, transferred to special income account.

†Net earnings of coastal steamers, commercial telegraph and news department transferred to special income account.

SPECIAL INCOME ACCOUNT

	1920	1919	1918	1917
Special income.....	\$ 10,966,448	\$ 9,049,342	\$ 8,128,751	\$ 10,713,299
Dividends.....	7,800,000	7,800,000	7,800,000	7,800,000
Balance.....	\$ 3,166,448	\$ 1,249,342	\$ 328,751	\$ 2,913,299
Previous balance.....	15,413,844	14,164,502	13,835,751	10,922,452
Spec. Inc. act. surplus.....	\$ 18,580,292	\$ 15,413,844	\$ 14,164,502	\$ 13,835,751

The sales of agricultural land in the year were 468,390 acres for \$9,592,706.95, being an average of \$20.48 per acre. Included in this area were 47,848 acres of irrigated land, which brought \$50.43 per acre, so that the average price of the balance was \$17.07 per acre.

In connection with Capital Expenditures, the report states that:—

"In anticipation of your confirmation, your Directors authorized capital appropriations in addition to those approved at the last annual meeting, aggregating for the year 1920, \$3,246,318, and, subject to your approval, have authorized expenditures on capital account during the present year of \$4,316,236."

Of much interest is the information in reference to the distribution of the share capital, which shows that the preference stock of the Company deposited with the British Treasury was returned to the owners on the first of October, 1920, and the common stock on the thirty-first of December.

The position of the holdings of common stock as at March 1st was as follows:—

	Shares	Percentages
United Kingdom.....	1,242,837	47.80
Canada.....	460,838	17.73
United States.....	626,510	24.10
France.....	79,123	3.04
Other holdings.....	190,692	7.33
	2,600,000	

The Handling of Railroad Baggage

By J. O. Apps, General Agent, Mail, Baggage and Milk Traffic Dept., C. P. R., Montreal, P. Q.

To those not intimately acquainted with the work, the handling of baggage-car traffic may seem prosaic and unimportant. This is not so, for the careful and prompt handling of baggage is of great personal interest to the owner, and the loss or abuse of, or delay to, that property causes both criticism and condemnation.

It is estimated that the average piece of baggage to-day is valued at approximately two hundred dollars, although the liability of railroad transportation companies is limited to one hundred dollars for all the baggage of an adult passenger. The average baggage car, between given points, carries about one hundred pieces per trip, with a total car average value of \$20,000.00. The average trunk alone to-day costs not less than \$25.00, a good grip or suit case not much less; therefore, great care should be exercised in the handling of these articles.

The question of promptness is urgent. It is pleasing to the passenger to find his or her property in the house or hotel room within a

reasonable time after arrival, as clean clothes or change in dress is desired, and the commercial man may wish to exhibit his samples promptly. Delay to baggage generally means inconvenience and often loss of temper, while the property that has disappeared causes a great deal of discomfort to mind and body and serious monetary loss.

Old Stage Coach Days

Why should the railways carry any baggage free is a question that has often been asked. In the old stage coach days, a traveller was permitted to carry his portmanteau on top of the coach without charge and this established a practice which has remained in effect ever since. It really means that in addition to the passenger getting transportation for himself for a certain fare, he gets also without further charge the free carriage of 150 lbs. of baggage with insurance of \$100.00 in case the property is lost or damaged. This property if sent by express would cost the owner about one-fifth of what he pays for personal transportation; in the United States the charge would be still higher.

Although the railways collect charges on baggage of excess weight and excess value and for storage of it, in addition to charges for transportation of baby carriages, dogs, etc., the Baggage Department is, by no means, a paying one; the revenue collected would not pay one-tenth the cost.

Not only is the personal baggage of the passenger taken care of, but baby carriages, dogs, bicycles, tool chests, guns, fishing rods, curling stones, skis, toboggans and the paraphernalia of the golfer are carried. This really includes all that one might require when taking a rail journey for business or pleasure.

The comfort of the passenger is always studied, and, to-day, between the larger cities, where transfer companies operate, one may have one's effects checked through from residence or hotel in one city to residence or hotel in another. A passenger sailing from the Atlantic ports of Halifax, St. John, Quebec or Montreal may check his baggage through from an interior point in Canada or the United States to his port of landing in Great Britain or the European continent.

One of its mournful duties is the transportation of the bodies of the dead. Careful schooling has educated railroad employees to exercise the greatest respect and consideration in the moving of this class of traffic and for the feelings of relatives or friends.

An Unclaimed Mummy

In the unclaimed storage rooms of the railway there is a vast accumulation of trunks, valises and many types of miscellaneous articles, such as umbrellas, canes, coats, hats, rubbers, baby carriages, and once in a while a crutch or a

wooden leg, all of which, apparently, the owners do not think worth while enquiring for. Not long ago a mummy, possibly a descendant of the Pharaohs, crept in and was sold by public auction with other effects.

The Baggage Department of a railway also has under its wing the handling of the most valuable and perishable food commodity, milk, which must be handled with the greatest despatch. On arrival of a train carrying milk at the larger centres, one may see the vehicles of a hundred dealers around the milk platform taking the milk to the factory for pasteurization, bottling and delivery to consumers.

Surely this is important traffic, and deserving of the best care and attention that can be given it. The Canadian Pacific Railway appreciates this fact, and has gone far towards promoting efficient handling. Special trains have been run to care for a few pieces of baggage that had unfortunately been overlooked. In the year 1920, the Canadian Pacific Railway handled 6,371,000 pieces of passengers' baggage, and of this vast number but 71 pieces were lost, 200 were damaged, more or less, and about 50 pieces delayed, so small a percentage as to run into the thousand decimals. There were 13,000 bicycles, 21,000 dogs, 28,000 baby carriages, 20,000 miscellaneous articles and 1,575,000 cans of milk.

In the parcel rooms, which also come under the administration of the Baggage Department, 1,189,000 parcels were handled.

Wireless Extension in Canada

Wireless is coming to be the world's great transmitter of news and method of rapid communication, and a nation desirous of keeping pace with world progress in all respects must pay continuous attention to bettering their systems of this most modern method of long distance conversing. Canada has not been slow in recognizing the importance of wireless in her economic existence, in her shipping and trade, even in her forests and fisheries, and in the bearing of this important factor on the whole of future Dominion development, and she has kept well to the fore in this regard.

The wireless service on the Great Lakes, in the Gulf of St. Lawrence, and on the Atlantic and Pacific Coasts is second to none in the world in the opinion of navigators. The Canadian trans-Atlantic wireless service, in competition with the cables, which has been in operation for some thirteen years, has been very successful, and is still improving in speed and accuracy. Authorities consider that no series of wireless-direction-finding stations have given such help and satisfaction to mariners as that established by the Canadian Government on the Atlantic Coast.

Scope and Object of Service

Government wireless in Canada comes under the Radiotelegraph Branch of the Naval Department, which, however, whilst owning the stations, has let several by contract, for operation, to the Marconi Wireless Telegraph Company of Canada. The primary object of the Government service is to provide facilities for communication with ships at sea and thus assist in their navigation and the safeguarding of the lives of the people they carry.

Incidentally, the service undertakes the handling of commercial messages with ships and also provides means of communication with points not reached by existing land telegraphs, an instance of the latter being the Queen Charlotte Islands in British Columbia.

The total number of stations in operation in the Dominion and on ships registered therein in 1920 was 563. Of these, twenty-seven are located on the east coast, and have ranges of from 100 to 1,500 nautical miles; eight are in Ontario, on the Great Lakes, having ranges of 350 nautical miles each; ten in British Columbia on the west coast have ranges of from 150 to 350 miles; two public commercial stations in Cape Breton and one in New Brunswick have ranges of 3,000 miles and 2,500 miles—the third being for reception only; two in Hudson Bay have a range of 750 miles each; eleven private commercial stations with ranges of from 100 to 200 miles; and there are thirty-nine Canadian Government steamers equipped with wireless capable of transmitting from 100 to 400 miles.

With the exception of the small station at Pictou, Nova Scotia, all of the forty-seven coast stations in the Dominion are owned by the Government. Those on the Pacific Coast, Hudson Bay, Barrington Passage, Nova Scotia, and the three direction-finding stations on the east coast, sixteen stations in all, are operated directly by the Department of Naval Service. The stations on the Great Lakes and the remaining stations on the east coast, thirty-one in all, whilst owned by the Government, are operated by the Marconi Wireless Telegraph Company of Canada, under contract, and under the terms of which the Company receives a total annual subsidy of \$89,200 and retains all tolls collected on messages except on Government messages which are handled free.

The Government-owned and operated station at Barrington Passage, Nova Scotia, maintains a commercial service with Bermuda. The Marconi station at Glace Bay has a continuous trans-Atlantic commercial service with Clifden in Ireland, and, as far as actual handling of traffic is concerned, is considered one of the best trans-Atlantic circuits. The use of the Hudson Bay stations is in suspense until the policy respecting the Hudson Bay Railway is decided upon. The stations on the British Columbia coast are unceasingly in touch with Pacific bound steamers.

Six Million Words Transmitted

A total of 341,333 messages, containing 6,128,990 words, were handled at all the stations in Canada in the year 1920. The total revenue collected during the year amounted to \$50,322.29, as against \$44,288.77 in 1919.

The Canadian Marconi Company has received its biggest expansion from the Canadian Government Merchant Marine, which has placed about fifty operators on its vessels, all of which are equipped with wireless apparatus manufactured entirely in Canada. A school for operators is carried on by the Government, at which about forty pupils are being trained continuously, whilst many of the operators on the Government vessels are returned soldiers, who reached their positions by way of vocational courses in the Department of Soldiers' Civil Re-Establishment.

Steps are under way at the present time to dot the expanse of the Dominion with a series of wireless stations, which will effectively cover it from coast to coast, rendering the most effective communication from the Atlantic to Pacific. This is part of a scheme of the formation of an All Red system of wireless communication which is to belt the British Empire and link up all the Dominions. A station at Newcastle, New Brunswick, taken over by the Marconi Company in 1919, is to be used as the connecting station with cross-Atlantic stations, and licenses have been issued to the same company for point to point stations at Winnipeg, Toronto, Montreal, and other locations, which will act as feeders for the trans-Atlantic service, and at the same time carry on a commercial service between these cities.

Advantage in Forestry Operations

Wireless within the Dominion itself is undergoing a continual expansion and branching out at the hands of both provincial governments and business corporations. A very fine service has been built up by the forestry service of the province of British Columbia as part of their precautions against forest fires and to keep rangers in instant touch with each other and headquarters. A system of stations is advocated for Northern Manitoba to put this region into communication with Winnipeg. Several pulp and paper companies have received licenses to operate systems, and last year the Shawinigan Water and Power Company at Shawinigan Falls, Quebec, received a license to operate a station there to communicate with their head office at Montreal, a distance of eighty-two miles.

The innovation of the Canadian Pacific Ocean Services in starting a Canadian news service by wireless to their liners in the North Atlantic created intense interest in Canadian, United States, and British shipping circles, as bringing Canada into that select circle of nations which gossip by wireless. Not only is the news of the Canadian markets, Dominion progress, and general Canadian happenings received by the Company's passenger liners at sea, but wireless stations situated elsewhere pick up the messages, and Canadian news vies in the importance of its appeal with that of Great Britain and the United States.

A review of the wireless situation in Canada gives gratifying evidence of the Dominion's progress with the times, and of its recognition of the necessity of keeping abreast in the extension of the uses of this great invention. It is being successfully used in connection with Dominion fisheries and forests, and will undoubtedly in the future be utilized to a greater extent in bringing the rich regions of the hinterland into touch with the governmental and industrial centres.

Survey of Canadian Bank Clearings

The prosperity of any country is more or less reflected in the prosperity of its banking institutions, and a review of the bank clearings over a given period may, therefore, be accepted as indicative of the commercial activity and progressive development in the areas served. While it is doubtless true that the increased cost of all classes of commodities is partly responsible for the expansion of clearing house figures, it may, nevertheless, be reasonably assumed that they have expanded upon a sound basis and represent in a large degree the intelligent application of the capital that uncovers natural resources, erects factories and establishes industries.

Ten years' survey, 1910 to 1920, of the clearing house figures of eight of Canada's principal provincial cities—Prince Edward Island maintains no clearing house—shows percentages of increase ranging all the way from 97.5% in British Columbia to 353.8% in Saskatchewan, and are as follows:—

	1910	1920	Increase
Regina, Sask.	\$ 50,739,159	\$ 230,269,296	353.8%
Montreal, Que.	2,088,558,000	7,109,189,038	240.3%
Toronto, Ont.	1,593,954,254	5,410,204,802	239.4%
Winnipeg, Man.	953,415,182	3,016,054,299	216.3%
Calgary, Alta.	150,677,031	438,073,077	190.7%
Halifax, N.S.	95,855,310	255,678,397	166.7%
St. John, N.B.	77,843,546	176,670,387	126.9%
Vancouver, B.C.	444,988,818	878,901,621	97.5%

In common with most other countries, the influence of increasing prices and unemployment

laid a strain upon financial structures. This has been responsible, among other causes, for a policy on the part of Canadian banks to restrict loans, and not a little criticism has been levelled at banking institutions on this account. On the whole, however, it will be conceded that if the machinery of trade and commerce is to be kept going, and because of the vital importance of that machinery, there is much to be said in favor of the restrictive policy adopted by directorates of banks in the matter of loans. It is apparent, however, that Canadian banks have handled, and are continuing to direct the financial affairs of the country through a trying period without serious disturbance. Under the administration of the banks, and with the goodwill of their supporters, Canada, it may well be claimed, is emerging from the present financial crisis successfully and with every promise of increasing strength.

So far as savings deposits are concerned, it is gratifying to note that they continue to express steady expansion. Statistics show an increase from December, 1919, to December, 1920, of approximately \$155,000,000. A further and even better proof is provided by the figures for the month of January, which evidence an increase of \$20,000,000 over those of the month previous.

The Imperial Bank of Canada

Amongst Canadian chartered banks whose activities command attention by reason of their progressive and practical policies, is the Imperial Bank of Canada. The success attending the efforts of the directorate and executive of the bank is attributed by them to the fact that with the exception of the absorption of the Niagara District Bank in 1875, the bank has refrained from amalgamations, and devoted all attention to "paddling its own canoe."

Established in 1875, the bank had an authorized capital of \$1,000,000 and a paid-up capital of \$805,000. During the first year of its existence, it absorbed the Niagara District Bank; after one year's operations the total assets of the combined institutions amounted to approximately \$3,000,000, with total deposits of \$1,600,000, with head office at Toronto, and branches at St. Catharines, Ingersoll, Welland and Port Colborne, Ontario. Its growth from that time is reflected by the following periodical figures:—

	1900	1910	1920
Total Assets	\$20,000,000	\$56,000,000	\$130,000,000
Deposits	14,000,000	42,000,000	98,000,000
Capital Stock (paid-up) ..	2,500,000	5,000,000	7,000,000
Rest Fund	1,700,000	5,000,000	7,500,000

In 1920, the Imperial Bank had but thirty-two branches. Ten years later, there were 101, and by 1920, the number had increased to 216.

The executive formulated a policy to direct all energies of the institution towards keeping the bank a strictly Canadian one, using its resources to the best interest of Canada. They

have kept away from expansion in foreign fields, but it must not be assumed that, as a result of this policy, the bank is not in a proper position to look after the interests of its customers in foreign countries, for it has excellent working arrangements with institutions in other countries, which places it at no disadvantage in open competition.

The present directorate, the president of which is Mr. Peleg Howland, a director of several insurance and other companies, is a strong one. The general manager, Mr. William Moffat, who is generally regarded as a capable banker, has had a long and varied experience in the bank's service.

An interesting feature of the activities of the Imperial Bank of Canada is its recently organized Publicity and Service Department. Since the close of the war, the bank has endeavored to do its part in helping to develop Canadian resources by opening many new branches, and this particular department was organized with a view to educating the people of Canada to acquire the saving habit. The department is on the alert to locate branch plants in Canada, furnishing complete and up-to-date information regarding the various industrial towns and cities.

Other functions of the department are to ensure that the customers of the bank are given the best possible attention and to be constantly on the "qui vive" for any complaints or useful knowledge that may be suggested either from inside or outside sources.

Prosperous Nova Scotia

In the face of unfavorable commercial and industrial conditions which existed throughout the past year, in common with the rest of the Dominion, Nova Scotia enjoyed a fair measure of prosperity, the total of the province's natural products amounting to \$199,541,600, as against \$192,197,300 in the previous year, a gratifying increase when the many handicaps against which the province had to contend are taken into consideration. The peak of industrial depression has now undoubtedly been reached and passed, and the outlook is for a steady and prolonged improvement.

In the year 1920, Nova Scotia coal mines had a gratifying increase in production over the previous year, although the limit of output was largely withheld from industrial troubles. New collieries have been opened up, and indications are for greater returns in the present year. The total value of provincial coal mined in 1920 was \$34,080,000 as against \$25,000,000, or an increase of nearly \$10,000,000. There was a slight falling off in coke and its by-products, this item accounting for \$4,200,000 in the annual revenue, as against \$5,771,000 in 1919.

In all branches of agriculture there was evidence of advancement, the continued development of dairying being the most pronounced feature. The crop of apples was the third largest in the history of the province, and field crops at the peak. Whilst in 1919 the products of the farm amounted in value to \$51,034,000, this made a slight decline in the 1920 values, accounting for \$49,456,500. The decline is explained in the fall of prices in agricultural products during the year, and not in a fall in output.

Fishing, Mining, Lumbering

The fishing industry, one of the most important revenue-producing assets of the province, although exhibiting somewhat of a decline when compared with the previous year, gives excellent indications of resuming its normal state, and overcoming the disturbed conditions which marked the phases of the industry in 1919. Nova Scotia's fisheries in 1920 were valued at \$13,890,000 as against \$14,350,000 in the preceding year.

Nova Scotia's mineral production, which accounted in 1920 for 13.86 of the Dominion total, had a value of \$30,187,533, a substantial increase over the 1919 value of \$23,445,215. Gypsum, limestone, etc., accounted for \$2,475,000 of this, showing a tremendous increase over the 1919 production value of \$938,000. Building materials and clay products jumped from \$1,888,000 in 1919 to \$2,312,600 in 1920. Owing to continued and prolonged industrial troubles, there was a falling off in the value of iron and steel products, the 1920 production value being \$15,520,000 as against \$19,000,000 in 1919.

The lumber trade continued in 1920 to hold a leading place amongst the largest income-producing resources of the province, and the provincial lumber cut for the year was larger than that of the previous one, accounting for a value of \$17,390,000 as against \$16,965,000 in the year preceding. There was a fairly substantial increase in the revenue accruing from game and furs, these being responsible in 1920 for \$850,000 against the 1919 figure of \$675,000.

Progress of Education

The progress of education in the province is indicated in the increased number of schools in operation, the larger enrolment of pupils, the better attendance at schools, and the general increase in teachers' salaries. The technical schools continued during the year to train large numbers of returned disabled soldiers, and their vocational courses were also taken advantage of to a large extent by the civilian population of the province.

In matters of health, arrangements have been completed for opening additional county clinics, courses in public health have been instituted, whilst health caravans have continued to do a

splendid work in the remoter parts of the province. A clause in the programme before the Parliament provides additional expenditure for promoting the health of those suffering from mental disorder or defect.

The situation in general in Nova Scotia at the present time is encouraging, with assurance of steady progress and prosperity. The province made good headway against the handicap of the economic upheaval it suffered in common with the remainder of the country, and having weathered the storm in good shape, has the courage and energy to make successful headway in the calmer waters ahead.

Sidelights on Western Canada

The more or less monotonous proceedings of the Grand Trunk Arbitration Board, sitting lately in Montreal in connection with the valuation and acquirement of the Grand Trunk and Grand Trunk Pacific Railways by the Canadian Government, were enlivened last week by the examination of Col. J. S. Dennis, of the Canadian Pacific Railway. Called as a witness to the history of the Canadian West, Col. Dennis—who perhaps has a wider and more personal knowledge of its growth and development than any other man—told an interesting story covering a period of nearly fifty years.

During the course of over one day's session, the witness, replying to direct questions, described graphically the changes that have taken place in that great Western territory from the time when a young man, in 1872, he first went West in the employ of the Department of the Interior until the present day—its early settlement and struggles, the method of land survey, first transportation lines, its agricultural beginnings, commercial extensions, mineral resources, etc.—showing by tabulated statements and maps the steady increase that has resulted during the period under discussion, and, under cross-examination, giving his opinion of the future that lies before it.

A very great deal of information was elicited from Col. Dennis during this examination, which was frequently interrupted by questions interjected by members of the Board.

Col. Dennis then went on to tell of the development of the West. He gave figures showing the increase in population for various periods; the growth of bank clearings at principal points; the increase in elevator capacity; the total land acreage and the acreage under cultivation; the land tributary to existing railway; lines available for settlement; the suitability of land for settlement; the growth of the railways; a description of the Peace River country; the amount of grain produced; the value of a settler to the railroads and country; irrigation development and extension; mineral output and the prospect of the Alberta oilfields.

Before cross-examination by the Government counsel, and after a brief description of the proposed work of the Western Canada Colonization Company, the witness was asked to give his opinion of the outlook for future development of Western Canada.

The Outlook for the Future

"Very briefly, then," said Col. Dennis, "my opinion with regard to the development of the Western Prairie Provinces is conditioned on one fact only. We have, as I have shown, at the present time, thirty-two million acres of land being cultivated and made productive. We have adjacent to the railway lines that serve that present productive area, an area equally large that is absolutely unproductive. If in the near future we can make this thirty-three million acres of land that lie within fifteen miles of existing railway, productive of settlement, it is a fair estimate that it will more than double the productiveness of the country, because, if the thirty-two million acres that we now have under cultivation produces the traffic we have at present, the colonization of the additional thirty-three million acres will produce a great deal more than a similar amount."

"Now," he continued, "whether we can colonize it or not depends upon the Government. If the Government, in view of the present railway situation, are going to impose restrictions with regard to colonization, of course that means a lengthened time within which development can be carried out. Assuming, as is suggested, that we have the door open to the character of colonization which brought about the settlement of the thirty-two million acres and the development of that country from what it was forty-nine years ago to what it is to-day, which resulted wholly and solely from the settlement of the country—there was not anything else which brought about this development—my opinion is that a very rapid development can be produced within the next few years, and the future of the Grand Trunk Pacific absolutely depends upon it.

"To sum up, I will say that if all interests take hold of the matter intelligently and aggressively and the Government will consider the interests of the National Railways and not bar the door, it is my opinion we should have a very marked movement of people to Western Canada; in fact, I will be disappointed if our immigration does not double within the next five years."

Pulp and Paper Industry in Quebec

As the forests of other countries have reached the stages of rapid depletion or complete exhaustion, the call upon Canada to supply raw material for the paper mills has become louder and more insistent, and this has resulted, in the past few years, in a tremendous expansion of Canada's pulp and paper industry, which has now come to assume second place in value of production among Canadian industrial activities and indicates a further development to yet greater proportions.

Though every province of the Dominion contains supplies of the raw material necessary for the supply of paper, Quebec has secured the first place in the pulp and paper industry, and leads the provinces of the Dominion in the value of production and the capital invested. Quebec has a forest area of 130,000,000 acres, some 5,000,000 acres of which are in private hands, 45,000,000 acres under license to timber men,

and the balance virgin timber land yet in the hands of the government. This estimate does not include the large resources of Ungava, which have not yet been explored. The woods used for the manufacture of paper are spruce and balsam, and the resources of these in the province are estimated at 250,000,000 cords.

Forty-six Mills Operating •

Tributary to these privately held and licensed lands, there are forty-six mills out of the Dominion's total of ninety-nine mills engaged in the industry, and invested in these is the sum of \$124,000,000 out of \$260,000,000, the total investment in the industry throughout the whole of Canada. Seventeen of the provincial mills are engaged in paper-making, seventeen are devoted to the manufacture of pulp, and the remaining twelve manufacture both pulp and paper.

In the year 1920, a total of 827,982 cords of pulpwood were produced in Quebec, having a value of \$10,163,515. In the finished manufacture, Quebec consumed 1,085,278 cords of the raw material, leading all the other provinces by a wide margin. An average of 2,078 pounds of pulp per cord was secured throughout the year, the average maintained in the sulphite process was 1,042 pounds per cord, and in the sulphate process, 1,145 pounds. The actual output of groundwood pulp was 493,520 tons, or 79.50 per cent. of the Dominion capacity. The province of Quebec produces more than forty per cent. of the Dominion's finished pulp.

Extensive Supplies of Material

The extensive supplies of raw material, the province's wealth of water powers in proximity to the forests, the excellent transportation facilities of all kinds with adequate shipping facilities, have all contributed to make the pulp and paper industry so important in Quebec, whilst the provincial embargo on the export of pulpwood cut on Crown lands in a raw, unmanufactured state has compelled manufacture in the province with the establishment of mills, and so built up a purely Canadian industry of prime importance. Activity is not confined to one or more localities, but its sphere is as broad as Quebec's woods are extensive, touching into every corner of the province.

The rapid expansion of the industry in Quebec can be judged from the extensions which the year 1920 witnessed. At Chandler, the Saguenay Company increased their output from 80 to 130 tons per day. At Grand Mère, the Laurentide Company installed two new newsprint machines, giving a total daily capacity of about 350 tons of newsprint and 60 tons of boards. At Quebec, the Hammerhill Paper Company established itself. At Clarke City, the Imperial Paper Mills and the Amalgamated Press took over a plant and enlarged its output. The Howard Smith

Company brought their output up to 100 tons per day. Price Brothers, by adding a new machine, increased their newsprint output to 300 tons a day. Construction of the International Company will increase output to 200 tons of pulp and the same amount of paper. The Brompton Company has nearly completed a new groundwood mill of 100 tons daily capacity and, in addition, has secured new tracts containing 1,000,000 cords of pulpwood. The Belgo-Canadian made important additions to their plant, and increased output. The Wayagamack Company brought their production up to 115 tons of kraft per day, and added 2,000 square miles to their timber limits.

Outlook for 1921

What 1921 will bring to the industry is foreshadowed in anticipated developments. The Three Rivers Pulp and Paper Company, incorporated last year with a capital of \$4,000,000, will commence activities this year. The International Paper Company's plant at Three Rivers is nearing completion, and will have a daily capacity of 200 tons of pulp and 200 tons of paper. Price Brothers Company Limited also have a new development at Saguenay, Quebec.

The province of Quebec, both through its Government and the large corporations operating plants in the province, is following a sane policy of forestation, having wisely profited by the experiences of older countries. "A tree for every one removed" is the motto, and many of the pulp and paper companies are replanting their limits in excess of this. Quebec is treating her forests not as mines of inexhaustible resources, but as crops to be resown after harvest.

Marten and Fisher Ranching

The accession of Canada to her logical place among fur markets of the world, by reason of her prominence among producers, has resulted in an impetus and a greater devotion of interest to other phases of the fur industry, and in none, perhaps, so much as the domestic rearing of fur-bearers. Success had been achieved, covering many years, in fox ranching and other branches of fur farming, the absolute feasibility of the venture in Canada proven, and all that had been accomplished justified confident hope of expansion. Thus has come about a widening of the field, not only as regards the establishment of ranches but in the variety of animals so reared.

This BULLETIN has dealt with farming successes in foxes, beaver, skunk, muskrat, rabbit and other valuable fur-bearers, and the many advantages the Dominion offers to this kind of ranching. Canada is the natural habitat of nearly every species of marketable fur-bearer, and has the finest of climatic conditions for producing the richest, glossiest, and heaviest furs. The trapping of fur-bearing animals in Canada is a

profitable industry, but it must be borne in mind that the domestic rancher has the advantage over the trapper, inasmuch as he is able to kill his animals when the furs are prime, and thus realize the best prices.

There may be a very profitable future in store for pioneers in the breeding of fisher and marten, a field which, as yet, has scarcely been entered. As the best fisher pelts are selling for \$100 each, whilst marten may bring over \$50, there is every inducement to enter into the breeding of these wild cousins. Up to the present, it has been found somewhat difficult to successfully breed these animals in captivity, due, it is thought, to lack of provision of facilities for exercise.

A Successful Beginning

A successful beginning, however, to a marten ranch is to be found at Louis Creek, British Columbia, where G. H. De Ley, as reported by the Commission of Conservation, has succeeded in raising two generations of the animals. From a pair of wild martens, he raised a litter of three, two females and one male. When one year old, the young females gave birth to two and four young respectively, and all of them have been successfully raised to maturity.

Success in the rearing of marten and fisher in the past would seem to have been largely, if not wholly, defeated by lack of general knowledge of wild animal breeding, which resulted in a failure to provide conditions and environment corresponding to the natural haunts. Large runs must be provided, with obstacles and hiding places such as hollow logs, and, in general, the animals permitted to live their natural life. Unlike foxes, marten do not thrive so well when the wild state is left behind, and they should not be induced to become tame.

Fisher and marten raising is in the experimental stage, through which the breeding of other wild animals had to pass before prosperous issue was reached. There is no reason to doubt but that the causes which have hitherto resulted in failure will be overcome, and the domestic breeding of these profitable little animals be placed on the same successful footing as that of other fur-bearers in Canada.

Across Canada—Halifax

The trans-Atlantic passenger who arrives in Canada at the port of Halifax is fortunate in receiving the pleasantest of impressions of the new land he has come to, and the Dominion has the satisfactory knowledge of the traveller starting on his trip, to whatever part of the interior he may be bound for, under the best possible auspices. For Halifax is, indeed, a fair city. Entering by its beautiful harbor, wending its old-fashioned streets, viewing its fine old

buildings on every hand, it is difficult to believe that one is on the threshold of a land yet in the primary stages of growth, for everywhere is the calm, cultivated, leisurely imprint of the older world.

Halifax, Canada's chief Atlantic port and the capital of the province of Nova Scotia, is as old as Dominion history, being founded in 1749 and incorporated a city in 1842. There was established Canada's first bank clearing house, her first newspaper, and the first public ferry. For many years it was a garrison town, British troops being stationed there at all times, and the towering battlements, harbor defences, and commodious barracks, testify to its pristine military eminence. It still remains the chief British naval station in the North Atlantic, and the hue of the naval uniform is at all times to be seen on its streets mingling with that of merchant sailors from all quarters of the globe.

Possesses Excellent Harbor Facilities

The city is situated on a peninsula five miles long by three miles broad, rising on Citadel Hill to a height of about 250 feet above the sea level. The harbor is land-locked with deep water and natural features which make it one of the best in the world. It is considered to rank third among those of the world for size, safety and beauty, and covers an area of ten miles with deep water anchorage for twenty-three miles. One of the best dockyards in North America is located at Halifax in connection with the Imperial naval station.

Commercially, industrially, and socially, Halifax belies its old-world aspect, and is at all times a thriving bustling centre of traffic and business. Four Canadian railways have Atlantic terminals there, whilst many freight and passenger steamship companies make regular sailings from the port to Europe and other countries of the globe. Beautiful parks and holiday resorts are to be found on all sides for the recreation of its seventy thousand population. The stately legislative buildings of the province head a notable aggregation of business erections and public utilities. Education is cared for by Dalhousie College, with its more than four hundred students, several convents, a theological college, and technical school. The city is the centre of an area of scenic grandeur, which yearly draws tourists and sightseers from a large radius.

A Growing Industrial Centre

Industrially, Halifax is important and annually increasing in this respect. At the end of 1918, it possessed 285 industrial establishments incorporated at a capital of \$17,848,860. Workers at these factories, numbering 8,315, received yearly \$5,689,915 in salaries and wages, and the value of their products was \$19,339,836. Manufactures include steel, shipbuilding, iron foundries,

dries, breweries, oil refinery, sugar refinery, agricultural implements, cotton and woollen goods, paper, musical instruments, gunpowder, mattresses, soap, candles, paints, chocolates, and spices. The largest sugar refinery in Canada, with a capacity of 4,200 barrels, is located there. In 1920, the city's exports amounted to \$54,562,947, consisting, in the main, of apples, hay, potatoes and lumber.

Construction has been under way for some time to vastly improve harbor facilities at a cost of \$30,000,000, of which two-thirds has been expended. The new ocean terminals, nearing completion, will have docking accommodation for two score of the world's largest ships at the same time, and the transit sheds will be the largest in Canada. In 1920, the port tonnage was 8,953,803.

Halifax, for Canada, in a way combines the old with the new. Reminiscent to a degree of Canada's colonial days, it sees the arrival of new peoples from overseas, and ushers them in to create future history. Both imperially and nationally, it is of prime importance as a port and outlet for the Dominion's exports, and, as a capital city, the affairs of an important province and section of Canada revolve about it.

The Canadian Red Cross

For the first time it has been possible to obtain a comprehensive idea of what the Canadian people achieved for the merciful work of the Red Cross during the war, when statistics of operations, which extended until well after the armistice, were presented to the Tenth International Red Cross Conference at Geneva. The publication is an illuminating illustration of the splendid manner in which the people at home supplemented the heroism of the Canadian Corps in the field, and the record of continuous labor and substantial donations is a remarkable one for a nation largely undeveloped and of small population.

The Canadian Red Cross Society is affiliated with the British Red Cross Society, being founded in 1896, the first overseas branch in the British Empire, its primary duty being to furnish aid to sick and wounded during war. By Dominion legislation in 1919, it set a new and national object: "In time of peace or war to carry on and assist in work for the improvement of health, the prevention of disease, and the mitigation of suffering throughout the world."

Up to the end of the year 1919, the Canadian Red Cross collected from its members and by public subscription for war work and after-war relief, the sum of nine million dollars, made up as follows:—Alberta, \$486,253; British Columbia \$469,468; Manitoba, \$965,371; New Brunswick, \$66,107; Nova Scotia, \$398,166; Ontario, \$3,737,994; Prince Edward Island, \$51,362; Quebec,

\$491,071; Saskatchewan, \$1,746,404; Yukon Territory, \$31,147; United States, \$609,816; Cuba, \$20,000; others, \$321.

Gifts to France and Europe

Supplies sent overseas during the war totalled 341,325 cases, of which 147,270 were supplied to hospital units in England. Assistance was also afforded to the French hospitals, particularly after the enemy drive of March, 1918, and to Serbia, Belgium, Roumania, and Italy. The work of the Society overseas as an auxiliary of the Canadian Army Medical Corps included part of the buildings and equipment of the hospitals at Taplow, Bushey Park, Ramsgate, Bexhill, Buxton, and Shorncliffe. Supplies were issued to all these hospitals, as well as to military hospitals in France, whilst two convoys of ambulances were provided and maintained in the field.

A valuable and highly consolatory work was carried on by the society for prisoners-of-war throughout hostilities, and after their liberation from foreign camps at the armistice. Only the supplies of the society made possible the extensive feeding and assistance rendered the tens of thousands of civilians the Canadian Corps found on its hands after capturing and liberating the Cambria area. Gifts to France in money amounted to nearly five million francs, in addition to 94,000 cases of supplies valued at nearly five million dollars.

The Canadian Red Cross Society, with a fine war record, carried on its good work in the period of post-war adjustment. Hospital equipment and supplies were returned to Canada for use in civil and military hospitals. The hospital huts at Bushey Park Hospital were presented to the London County Council as a home for delicate children, and those at Taplow to the City of Birmingham for conversion into a 300-bed hospital for tubercular and crippled children. A highly satisfactory record of a work of mercy in time of war and peace

Teaching Future Farmers

With agriculture the first industry of Canada and likely to remain so, the farmer is a factor of paramount importance in the Dominion's national life, and the better farmer he is, the greater the benefit to the country. His sons and daughters are the farmers and farmers' wives of to-morrow, and so their education is really one of the most important problems of the country. To keep the children of the farm on the land, a love of the farm and all that pertains to it must be inculcated in early years, and so it is incumbent upon all who have national agricultural progress at heart to make the education of the young people along agricultural lines as pleasant as possible. Agriculture is a life profession, the

study of which is never exhausted, and the earlier one commences seriously upon erudition, the greater are the chances for the most absolute success in the pursuit. The ideals of intelligent farming cannot be infused at too early an age, nor the young idea set too early with his feet in the right paths.

And so boys and girls in Western Canada are being taught in their early years how to farm so as to obtain the utmost from the earth and yet maintain it in all the richness of its virgin state, and how to rear the best type of animal, discovering for themselves the fallacy of bringing to maturity the scrub animal. Instead of viewing farming through the drudgery of chores, in which they see little romance, they become imbued with the nobility of the agricultural profession, and are keen to adopt the pursuit as their life work.

Chores Become Pleasant

This object is best achieved by giving the child his own plot of soil to cultivate or his own calf or lamb to raise, playing upon the natural instinct of love in possession, and the inherent desire of creating. To further encourage the young idea, special classes are arranged for at provincial exhibitions, at which the youngsters can exhibit the grain and cattle for whose production and growth they are responsible, and compete with other boys and girls of the West, receiving all the benefits of competitive criticism. The competitions cover many classes of farm endeavor, and there are equal chances for the youngsters of both sexes in the awards. Though girls, in many cases, are just as interested in grain and live-stock entries as their brothers, there are many classes in which they shine alone, all of which have relation to the multifarious duties of the Western farmer's wife.

No one can doubt the success of this system of education who is present at one of these exhibitions and senses the animation which pervades the atmosphere of the judging events. Excitement waxes high as exhibit after exhibit is eliminated, and reaches its pitch in the culminating selection of grand champions. And in regions which are producing grain and cattle which carry off world honors, it can readily be understood that these winners are most creditable examples of their kind.

But the most valuable feature of the work is the love of good farming for itself, which is fostered in the minds of the young generation, and the inspiration to raise more and better produce to their own and the national gain.

The Scandinavian Immigrant

Nearly all authorities on Canadian immigration concur in the opinion that the very best immigrants that have come to Canada from foreign countries are those from Iceland, Sweden,

Norway, and Denmark, and it is a gratifying feature of the tide finding its way to Canada that it still contains a substantial proportion of these peoples, whilst a handsome contribution of this same fine stock is annually donated by the United States.

Physically of a sturdy, handsome type, the Scandinavian peoples are found, almost without exception, to be cleanly, industrious, and progressive in every respect, making the most desirable class of citizens, and being numbered among the most successful and prosperous farmers the Dominion possesses. Education is widespread in their native countries, and they come to Canada imbued with the same high ideals of learning and culture. There is no language problem with them, as they are eager to master English, and to develop all the requisites of complete and successful citizenship. They employ the new tongue without embarrassment and learn rapidly.

The Scandinavian races are the most readily assimilable of Canada's immigrants, mixing freely and readily with the Anglo-Saxons, intermarrying, and avoiding the handicap which colony settlement gives to the progress of foreign people. They are deeply religious, adherents of the Lutheran faith for the most part, and churches spring up wherever settlement takes place with social life centering there. A deeply sociable people, they have their own social and political organizations wherever settlement warrants, and their own papers are circulated throughout Western Canada. From their first days in Canada they take a deep interest in Dominion politics, turning readily to matters of government. Several, indeed, have attained the honors of the provincial legislatures, whilst men of the Scandinavian race are to be found occupying many public offices in the West. They are deep and earnest students, and their achievements in learning are remarkable when their handicap is considered. Several Rhodes scholars from Manitoba have been Scandinavians.

First Settlement in 1872

The first settlers came to Canada from Iceland in 1872, but the real movement began in 1874, when some five hundred left their native shores for the new continent. More than fifteen hundred new settlers came in 1876, settling in Manitoba and North Dakota. Since 1680, they have come to Canada in a more or less uninterrupted stream from their northern homes; whilst the Dominion has received a substantial number of those who first settled in various parts of the Western United States. At the time of the 1911 census there were 49,194 Canadian citizens who had been born in Norway and Sweden; 7,109 in Iceland; and 4,397 in Denmark. From 1900 to 1919, there were admitted to Canada, 6,546 citizens of Denmark; 4,501 from Iceland; 20,618 from Norway; and 28,337 from Sweden. Of the

Scandinavians in Canada, 97.82 of the total are to be found in the four Western provinces.

In Manitoba, the greater number of these people centre about the city of Winnipeg, and few are to be found elsewhere in the province. Large settlements are prospering at Langenburg and Stockholm, at Buchanan and Wadena in Saskatchewan, whilst there are also many in the Duck Mountains and at Fort Pelley. Alberta has by far the largest share of these people, who are to be found along the Calgary-Edmonton line in some of the most fertile and prosperous farming communities. In British Columbia, where extensive settlement has taken place, the same pleasing progress is exhibited.

A most gratifying feature of Scandinavian settlement in Canada is that it is almost wholly agricultural, and in the West they will be found in the richest and most progressive districts. Whilst retaining their national individuality, their customs, language and religion, they are British in sentiment and intensely patriotic, as their fine contribution to Canada's army evidenced. With an inherent realization of their own worth, they stand, without embarrassment, upon their own feet, and are absorbed as Canadians without losing their individual qualities. Clean-blooded, thrifty, ambitious, and hard-working, they are of the best of Europe's contribution to a pioneer nation.

The Labor Situation

A survey of the labor situation over Canada, as affecting the month of March, rouses both gratification and dissatisfaction. Whilst the average volume of employment continued on the decline exhibited in the preceding month, there was a substantial drop in the cost of the weekly family budget, and somewhat more time was lost during the month, owing to industrial disputes, than in February.

The decline in employment was fairly general throughout the Dominion. In metals, machinery and conveyances, decreases were shown in the crude, rolled and forged divisions of iron and steel and in railway shops and shipbuilding yards. Industries of the food-producing groups continued fairly steady. Textile and clothing groups showed further gains, especially in knitting and garment industries in Ontario and Quebec, and the boot and shoe trades. Reductions in the mills of Ontario and Quebec accounted for a continuance of the decline in pulp and paper. Gains were noted in furniture and musical instrument factories. Planing mills and sash and door factories everywhere showed an increase in anticipation of the building season. Building operations were, however, slow, and railway construction showed a decline. Coal mining was generally less active, with the exception of Alberta, which registered a recovery. Logging practically ceased, except on the Pacific

Coast, and river driving had not begun. Saw and shingle mills were entering upon the period of greatest activity.

Industrial Disputes and Cost of Living

The loss of time on account of industrial disputes during March was greater than during February, 1921, and also greater than during March, 1920. There were in existence during the month some 27 strikes, involving about 3,252 people, and resulting in an estimated time loss of 52,928 working days.

In prices the movement continued downward, the chief decreases appearing in eggs and butter, in textiles, hides, leathers, metals, building materials, and chemicals. Grains were slightly higher, except oats, but fodders were down. Cattle and beef were slightly up, but hog products were lower. Potatoes, onions and canned vegetables were slightly higher, whilst bread, flour and tapioca dropped slightly. The average cost of a list of twenty-nine staple foods in sixty cities at the beginning of March was \$13.23, as compared with \$14.06 in February, \$15.98 in March, 1920, \$15.77 in March, 1919, and \$7.68 in March, 1914.

Canada's Coal Situation

Canada created a record for coal production in 1920, when she produced 16,968,658 short tons, as against 13,919,096 short tons in the preceding year, or an increase of 21.9 per cent. The previous high mark was set in 1913, when the output totalled 15,532,878 short tons. Exports increased to 2,558,223 tons, as compared with 2,070,050, but this was counter-balanced by the increase in imports from the United States from 16,982,773 to 20,815,596. The total value of production is estimated at about \$70,000,000.

With only one exception, that of Saskatchewan, every province of the Dominion exhibited an increase in production during the year over the 1919 figures. A particularly interesting feature of the year was the wresting from Nova Scotia by Alberta of the honor of premier producer, the Western province leading the Eastern by nearly four per cent. Alberta produced 41 per cent. of the total output, or roughly 6,700,000 tons; Nova Scotia, 37.8 per cent., or 6,500,000; British Columbia, 18.3 per cent., or 2,550,000 tons; Saskatchewan, 1.9 per cent., or 330,000 tons; and New Brunswick, 1 per cent. or 170,000 tons. The reduction in Saskatchewan's output is attributed to the greatly increased use of Alberta coal in Manitoba and that province.

A both interesting and gratifying feature of the coal situation in 1920 was the increased use of native coal, especially in the Prairie Provinces. The war, which cut down shipments of anthracite from the United States to Manitoba, gave Alberta her opportunity to introduce her product

on the qualities of which there was a lack of education. She was not slow to force her way, and is maintaining the position assumed with every indication of increasing her market. This is shown very clearly in the shipments of coal from Alberta eastward, which in 1920 totalled about 500,000 tons as compared with approximately 250,000 tons in 1919.

Alberta's Fishing Industry

By James Colley, Secy. Western Canada Irrigation Assn., Calgary, Alberta.

The fishing industry is one that is seldom associated with the province of Alberta, and people who think of this province as simply a grain-growing and stock-raising country may be surprised to know that fishing is one of the largest of its potential resources.

Throughout Northern Alberta are thousands of lakes that are literally teeming with fish, and though an important industry has already been built up on some of these lakes, the industry is very small compared with its possible development.

During 1920, seven fishing companies were operating in the Northern Alberta lakes. During the summer, 43,941 hundredweight of whitefish and 7,114 hundredweight of other kinds of fish were caught in the Lesser Slave Lake and Lake La Biche. These two lakes are open for fishing during the summer only. Winter fishing is, however, carried on extensively on the Buffalo and other lakes. One company alone, the McInnes Fish Company, which operates on the Lesser Slave and Buffalo Lakes, loaded fifty-two cars of fish for outside points last year, part of which found a market at points as far away as Toronto and Chicago.

Whitefish is the species of fish most generally found in these lakes. This fish has always figured in the records of the Canadian North West as a reliable food supply available winter and summer. It is doubtful whether the fur trade could have been carried on without it. Whitefish was the food of the native hunter of the Northern wilds, as well as of the dog team hauling furs to the posts. Many times the scows going to the posts laden with the year's supply of foodstuffs were wrecked in the rapids. The factor and his hunters would have been in a sorry plight but for the whitefish they were able to catch, and on which they lived until the following year.

Methods of Operating

During the summer months, motor boats and skiffs are used for fishing in the Northern Lakes. About seven hundred men are employed by the larger companies. In addition, there are a number of small operators as well as farmers and homesteaders who fish in the various lakes. The fishing companies have established collecting stations and chilling rooms at convenient

points around many of the lakes. Every day a large gasoline launch visits these stations, receives the catch, and conveys it to a central station. On Lesser Slave Lake, the head station, is Faust, a small town through which the Edmonton, Dunvegan and British Columbia Railway runs.

At Faust is a large packing station. Here, fish are repacked in boxes containing crushed ice, and kept in the chilling room for ten or twelve hours before being forwarded to the outside market. During the winter, large quantities of ice are cut in the lakes for the summer operations. About 1,200 tons of ice are being stored at Faust for next summer's catch on Lesser Slave Lake.

On the Buffalo Lake most of the fishing is done in the winter. Two holes are made in the ice. Into one of them the net is inserted. By means of floats and poles, it is carried along under the ice until the next hole is reached and the other end secured. When the net is fully extended it is left for about twenty-four hours. By this time, it has become quite heavy with fish, and the fishermen haul it up, depositing a wriggling silvery mass on the ice. In a few minutes after dressing, the fish are frozen and are ready for shipment to the markets of Chicago, New York and elsewhere.

About a hundred men have been employed at Buffalo Lake this winter, and approximately 600,000 pounds of fish caught. The regulations governing the fishing industry are simple, and framed in such a way that the native son and the man who pioneers receive benefits in keeping with their usefulness to the nation. Hence, the homesteader, the half-breed and the Indians are allowed to fish with nets during the close season, when the waters of the lakes are closed to all save them.

Regulations for Protection

During the summer season in the Lesser Slave Lake, not more than 1,500,000 pounds of whitefish may be caught, and not more than 500,000 pounds in Lake La Biche. An important regulation for the protection of the fish during the open season is that all nets must be raised from the water from Saturday evening until the following Monday morning, so as to admit of free passage for the fish.

Buffalo Lake, Lake La Biche and Lesser Slave Lake are only three of hundreds of lakes in Northern Alberta in which whitefish in countless millions exist. It is estimated that with the present degree of exploitation, under strict government control, there are sufficient fish in the Buffalo Lake alone to keep the present companies busy for many years.

Though fish has been caught in Lesser Slave Lake for many years, and prior to government inspection in a wasteful manner, this body of water still apparently holds an inexhaustible

supply of whitefish. Lake Athabasca, which is as yet untouched except for local food supplies, teems with fish, and the same may be said about Great Slave Lake, Great Bear Lake and many other lakes known to the map makers, together with great numbers which are nameless and known only to the trapper and the Indian.

The quantity of fish available in the Northern lakes is beyond computation, and there is little room for doubt that in the whitefish, which from the coming of the first white man has been the mainstay of the missionary, the trapper and the trader, Western Canada has an asset which is no mean one, even though it may bulk small in comparison with the great agricultural, mineral and timber resources of the country.

The Cascara Drug Industry

The recent announcement of the shipment of five tons of cascara bark from the British Columbia forests to British and American drug firms has revealed the fact that the only known supply, in large quantities, of this valuable drug is located in that province, according to the *Canadian Forestry Journal*. Previous to the war, the major portion of the world's supply of cascara bark was obtained from Japan, Germany, and the United States. When the war started, the German supply was cut off, while the inroads made on the Washington and Oregon supplies by careless dealers practically exterminated the bush within easy access of transportation in those regions, and, as a consequence, eliminated the United States from active competition with the rest of the world in this phase of the drug industry.

The large number of valleys situated along the British Columbia coast, together with the long, warm, damp days, furnish a splendid combination for the growing of this herb. The plant grows to a medium height, and when it has attained full growth, the bark is taken off by collectors, who dispose of it to drug manufacturers. A peculiar characteristic of the shrub is that if one-fourth of the bark surface is taken from the tree it will cause the death of the plant, and in order to avoid this, great care must be taken by the collector to leave a strip of bark that would eventually grow around the trunk.

Company to Commercialize Drug

Botanists and government forestry officials have known of the existence of this valuable drug for some time, but no effort was made to commercialize it. At present, there is in formation a company which has for its aim the cultivation on pre-empted land of this herb, for the purpose of supplying drugs in the raw state to the wholesale drug houses. It is estimated that with proper care and cultivation, a man, with 40 acres of land planted in wild botanicals, will produce as much revenue as a man with forty acres of richly cultivated bottom lands growing fruit and garden produce.

Departmental Publications

Any of the following publications will be sent free on request.

Alberta, Saskatchewan and Manitoba.—A descriptive statistical booklet on the three prairie provinces with full information on the West.

The Park Lands of Central Alberta.—Descriptive of the area tributary to the Calgary and Edmonton line of the Canadian Pacific Railway in Alberta. History, description of soils, development, lands open for settlement, and information for settlers.

Irrigation Farming in Sunny Alberta.—Full description of Alberta's irrigated lands, their progress, production and possibilities.

Business and Industrial Opportunities in Western Canada.—Full listings of industries existing and business openings in the provinces of Western Ontario, Manitoba, Saskatchewan, Alberta and British Columbia.

Canadian Pacific Reserve Farm Lands in Lloydminster and Battleford Districts.—Information of Canadian Pacific lands in these districts, history, farming information, progress, and possibilities.

Canada's System of Government.—Canadian government briefly outlined to portray its democratic traits.

The Story of Canadian Nickel.—History of the nickel mining industry.

Canadian Oil Exploitation and Prospects.—An expert engineer's history of Canadian oil development and future possibilities.

Canadian Water Power Development.—Authoritative and exhaustive survey of water power reserves and possible development.

Paper Pulp from Flax Straw.—An investigation engineer shows the possibility of the development of a new industry in the West.

A Canadian Grain Handling Plant.—How Canadian grain is stored and shipped. Authoritative article on Canadian elevators.

Value of a Settler to Canadian Railroads.—Computation from reliable statistics of a farming settler's revenue-producing worth to Canadian railroads.

Bituminous Sands of the Athabasca Region.—Description with known values, and possibilities of development of the widely known tar sands of Northern Alberta.

The New Canadian Oil Field.—Dealing with the Arctic oil region of the new strike.

Water Powers of the Maritimes.—Authoritative article on the undeveloped power systems of the Eastern provinces.

Water Powers of Manitoba.—The water powers of this province dealt with exhaustively.

Oleomargarine.—History of oleomargarine in Canada and its future prospects.

Synopses of Natural Resources.—Forty-five pamphlets dealing briefly but concisely with Kaolin or China Clay, Oil Shales, Mica, Fluor-spar, Asbestos, Molybdenum, Magnesite, Fruit, Flax Fibre, Nickel, Coal, Clays, Salt, Copper, Zinc, Silver, Gold, Pyrites, Iron, Potash, Talc, Feldspar, Platinum, Phosphate (apatite), Manganese, Graphite, Cement, Barytes, Gypsum, Irrigation, Petroleum and Natural Gas, Corundum, Sulphates of Sodium and Magnesium, Timber and Pulpwood, Fish, Fur, Peat, Grazing Lands, Mineral Waters, Building and Ornamental Stone, Whaling, Sealing, Wheat, Oats and Barley, and Water Powers.

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Department of Colonization and Development,
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Ask the Canadian Pacific about Canada



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June, 1921

The Problem of Farm Help

THE problem of farm help, which year after year in connection with the cultivation and harvesting of Western Canada's increasing crops is a matter of such vital importance to the farmers, formed the basis of an interesting discussion at the Second Annual Conference of Western representatives of the Employment Service of Canada, recently held at Regina, Saskatchewan. It was attended by representatives of the four western provinces, Director Bryce Stewart, Ottawa, and delegates from the United Farmers of Alberta, Saskatchewan and Manitoba.

Agriculture is a highly seasonal industry divided into two work periods of April and May, and the second period August, September and part of October. These two seasons are by no means well divided and the dates of commencing or closing of each season vary considerably.

The demand for men in either season, and especially in the harvest season, fluctuates widely, giving to the harvest labor operations a distinctly spotted character.

Weather conditions are probably the greatest factor in causing fluctuations in the demand for men. Hot, dry weather, causing grain to ripen quickly, will create a frantic demand for a large number of men, whereas a spell of cool, wet weather will result in hundreds of farmers refusing to accept men directed to their farms.

Varying degrees of weather over comparatively small areas will cause harvest in the various areas which should be done in succession, being all done at the same time. Harvest operations under even normal conditions never commence on the same date two years in succession. All fields, even in the same area, are not sown on the same date in the spring, thereby causing a difference in the date of ripening.

Rust, grasshoppers, hail, drouth and rain are ever-present causes of fluctuations in the demand for harvest help, and many transient harvest

laborers secure a surprisingly large number of jobs during the short seasons.

Added to the above uncontrollable causes of fluctuation must be considered the desire of farmers to complete harvest operations as early as possible. The fact that practically all the farmer's earnings are standing in his fields, the desire to complete the summer work as early as possible, and the fear of unfavorable fall weather, all tend to create a big demand for a few weeks, which demand then tapers off. Harvest laborers too frequently wait in the cities for the larger wages paid during the peak load and then rush back east for inside jobs before the coming winter.

That the farmers and the unemployed both appreciate and realize the co-operation of the Employment Service was brought out at the Convention by the farmer delegates who, to further this co-operation, presented recommendations dealing with the following points:

The abolition of private labor bureaus; standardization of wages in different provinces; one standard of wages for five months commencing April 1st, and for eight months commencing April 1st; one standard for three months commencing September 1st.

A periodical survey to estimate labor requirements for any period; farmers' associations should be used for this purpose. Labor bureaus should make every effort to adjust labor supply to meet the requirements of seasonal employment within the province, by making convenient the transfer of labor from agriculture to winter industries and vice-versa.

In adopting a standard of wages, due consideration should be given to the experience of the applicant. It was suggested that \$40 to \$50 would be fair for the first five months and \$50 to \$60 for the eight months season. Rate of harvesting season to be adjusted at such time.

After discussion, it was agreed that farmers' organizations urge their membership to a more

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Norman S. Rankin, *Editor.*

general use of the Employment Service, where offices are established, pointing out the evils of picking up help indiscriminately, or seeking to secure it from other sources at varying wages; and agreed that the Employment Service in co-operation with the various farmers' organizations put on a campaign urging farmers to engage help early as an insurance against loss through labor shortage.

General Agricultural Situation

The agricultural situation on May 31st for Canada is as follows:

There has been an abundance of rainfall all over the Western Provinces; the dry belt districts are receiving more rain than has fallen in many years. Reports show that there will be very little difference in acreage in the Canadian West from that of 1920. Condition of the seed is the best in years, and this will offset the lateness of the season.

British Columbia.—Conditions along the coast are good and rains have fallen which will materially assist the berry crops. The Okanagan District reports that the apple trees are blooming well and that the set is good. Some of the varieties are rather spotty as to yield, but it is estimated that the harvest will be above the ten-year average. The potato acreage will be less than last year on account of low prices prevailing. All small fruits are reported in excellent condition.

Alberta.—There will be an increase in acreage in this province for 1921. At this reading, there is no district that reports lack of moisture; most advise conditions excellent. The seed bed is satisfactory and rains are still falling over the province. The cattle and sheep situation is not as good on account of the United States tariff coming into effect. This is forcing the export of cattle to Great Britain. Ranges are in good shape.

Saskatchewan.—Welcome rains and snow have fallen in all parts of the province during the month, and have, in some instances, delayed the work; on the whole, farmers are making progress. A little delay by rain is offset by the good seed bed. The wheat crop is about all in and perhaps 60% of the coarse grains. The province will have about the same acreage in wheat as 1920, but will have less oats and flax and an increase in spring rye.

Manitoba.—Acreage conditions are good, very little difference in acreage being reported. There has been ample moisture. Of the wheat acreage, 50% is showing above the ground and first week of June will finish the seeding. Some damage has been done by wind, but not sufficient to alter the average, and, at this writing, conditions may be said to be 100%.

Ontario.—Farming conditions are fair in this province. Rain is needed and the pastures are beginning to show lack of moisture. The fall wheat, however, is coming along

nicely and may be said to be an average for this time of year. There will be a drop in tobacco acreage on account of the low price for 1920. The beet acreage will be somewhat off also on account of price. The corn acreage is up to the average and if rain falls will be satisfactory.

The acreage in raspberries has been increased and prospects are good. The recent severe weather had affected the soft fruits and it is thought that peaches will be light. Plums are not looking too good; rather late. Cherries are now seen to have been hit by the cold snap and the estimate is 40%. Some damage to the grape crop also, estimate 20% lighter than 1920. The apple situation is encouraging and the outlook is for average crop.

Quebec.—This province is looking for rain. The ground is hard in heavy districts and in light is suffering. The acreage is average in all the grains, but backward account of lack of moisture. The apple and small fruit crops are excellent. There would appear to be reason to believe that the apple crop will be better than the average.

New Brunswick.—Conditions are good and farmers are busy seeding. Acreage estimates show that average acreage will be sown to potatoes. Clover and hay crops are 100%.

Nova Scotia.—All crops doing well; hay and clover stand better than 100% on last year and roots going in with average acreage. The apple crop of the Annapolis Valley, it is estimated, will be 50% more than 1920. Last year produced 1,000,000 bbls.

Prince Edward Island.—All crops doing well. Average acreage planted.

Live Stock Situation.—The Western Provinces have a good condition as regards pasture, but much anxiety prevails on account of the United States tariff against live stock. Several thousand cattle have been shipped to United Kingdom in an effort to re-establish the trade for immediate slaughter at landing ports. It is questionable, however, how much the British market can stand without depression. There is talk of the farmers trying out the chilled meat market.

Wool.—The Canadian wool clip is now in full swing and it is estimated that we will have 15,000,000 lbs. So far the Canadian Co-operative Wool Growers report they have been able to dispose of all that they have received, but the Western cross breeds and fine wools have not come to hand. With the United States market cut off they have a problem. Their representative will visit the United Kingdom in June to make arrangements to market there. Prices range from 30c. for fine medium staple to 15c. for coarse; market slack.

Dairy Products.—This month has been very depressing for the butter and cheese makers. The market has been badly off and buyers draggy. The export demand is poor on account of the unemployment in the United Kingdom. At present no indications of improvement.

Agriculture in the Maritimes

The building of the transcontinental line in Canada from coast to coast opened the way for pioneers to the great plains of the West, and from that date economic Canada became more than the eastern provinces. The western atmosphere imbues optimism and instils vigor, and at the hands of energetic tireless workers, whose faith in the country was greater than the generally prevailing scepticism, the West was proved and advertised and the Maritimes in a corresponding degree neglected. The intending

settler in the contemplation of his desires too often views in imaginary panorama, gigantic grain fields, huge herds of cattle and general farming operations carried out on a Titanic scale. This is the effect of the tremendous breadth of western conception. The easterner, with perhaps a less vivid imagination and an ambition more controlled, is doing things on a smaller scale, and content with a lesser but sure degree of prosperity, pursues his own way.

Whilst the Canadian West in its phenomenal expansion has been holding the world's attention, the Maritimes have been progressing in their own steady way, and it is rank fallacy to suggest that their lack of publicity has been due to lack of development. A survey of agricultural history will show that production is not only being maintained but is making steady progress. Annual figures of cereals and tubers record substantial increases in yield, whilst the average acre production is more often than not in excess of the Dominion average. Livestock figures, also, show a very healthy increase.

Healthy Annual Averages

The fertility and productivity of the farms of the Maritimes, of many harvests compared to the newer settled area of the western provinces, is forcibly illustrated in the healthy average they maintain in their production.

Thus, in 1920, when the average yield of wheat over the Dominion was 14.5 bushels to the acre and the five-year average was 15.5, New Brunswick had an average yield of 17.50 bushels, Nova Scotia 17.20 bushels, and Prince Edward Island 12.00 bushels. The 1920 average for oats was 33.5 bushels to the acre and the five-year average 32 bushels. In that year, New Brunswick secured an average of 30.25 bushels, Nova Scotia 32.3 and Prince Edward Island 30 bushels. New Brunswick raised 23.75 bushels of barley to the acre, Nova Scotia 28.4, and Prince Edward Island 29 bushels when the Dominion average was 24.75 and the five-year average 24.5. With the potato average in 1920 at 170.5 bushels and the five-year average at 136.6 bushels, New Brunswick and Nova Scotia far exceeded this with averages of 198 and 201 bushels respectively, whilst Prince Edward Island had an average of 170 bushels to the acre.

Whilst the Maritime provinces of Canada are in the main capable of producing a wider diversity of crops than the westerly provinces, the cereals and tubers, which have made the West famous, form a substantial portion of the annual agricultural yield. The production is increasing each year, whilst the average per acre is maintained. This increase in production is very clearly shown in a comparison of the official yields of 1915 and 1920. Some of the increases are remarkable.

	1920			
	New Brunswick Bush.	Nova Scotia Bush.	Prince E. Island Bush.	Total Bush.
Wheat.....	464,402	506,620	477,993	1,449,015
Oats.....	9,118,615	4,836,097	5,298,945	19,253,657
Barley.....	193,768	321,972	147,160	662,900
Buckwheat....	1,509,027	220,919	82,164	1,812,110
Potatoes....	15,510,300	10,426,051	6,174,740	32,111,091
Turnips....	7,069,670	8,597,873	3,876,750	19,544,293

	1915			
	New Brunswick Bush.	Nova Scotia Bush.	Prince E. Island Bush.	Total Bush.
Wheat.....	335,000	298,700	705,800	1,339,500
Oats.....	3,058,000	2,057,700	3,074,600	7,190,300
Barley.....	40,800	102,700	75,800	219,300
Buckwheat....	960,000	159,000	56,500	1,176,000
Potatoes....	3,694,000	2,760,000	1,637,000	8,091,000
Turnips....	869,000	1,223,000	923,000	3,015,000

The increase in livestock is just as gratifying and shows the growing interest of the Maritimes in stock raising, dairying and mixed farming to which so many sections are adapted. Following is a comparison of the livestock in the Maritimes in 1915 and five years later.

	1920			
	New Brunswick	Nova Scotia	Prince E. Island	Total
Horses.....	76,737	67,853	35,569	180,159
Cattle.....	332,998	398,461	139,143	870,602
Sheep.....	280,090	403,567	128,529	812,186
Swine.....	92,925	57,950	49,917	200,892

	1915			
	New Brunswick	Nova Scotia	Prince E. Island	Total
Horses.....	65,827	63,244	36,898	165,969
Cattle.....	198,102	273,272	106,546	577,920
Sheep.....	111,026	205,542	86,640	403,208
Swine.....	72,533	53,402	40,792	168,727

Much is to be said for the farms of the Maritimes. Almost invariably picturesquely situated in the charming scenery of the Atlantic coast, they have many obvious advantages in the way of settlement and markets, whilst climate, soil fertility, and diversity of crop production are rivalled by few regions. Figures show that agriculture is more than maintaining its own in spite of rival industries, and doubtless the time will come when the three Atlantic provinces will constitute a more serious rival to the prolific Prairie Provinces.

Prize Oats and Barley

The last issue of the BULLETIN dealt with the achievements of Western Canada as a prime wheat growing region as supported by ten years of uninterrupted success in securing the world's premier honors for this cereal in contest with the first growers of the American continent. The West has become justly renowned for its grain production, and instead of the cattle-dotted prairie which the mind conjured on mention of the western plains, the imagination now pictures

a sweeping vista of miles of surging waves of golden tossing heads justifying the appellation of "Granary of the Empire." The prominence given to successful wheat growing is apt to suggest a specialization and exceptional achievement, but the versatility of Western Canadian production was very ably illustrated at the last International Livestock and Grain Show held in Chicago in 1920, when out of twenty-five prizes, Canada secured twenty-one including the premier trophies for wheat, oats and Clydesdale horses.

The prominence wheat receives may overshadow the production of other cereals to the exclusion of the successes they have also achieved in the international field. Yields of 120 bushels of oats to the acre have been recorded in Western Canada and one-hundred-bushel yields have ceased to cause comment. In point of quality, it might be mentioned that the \$1,500 trophy for oats presented by the State of Colorado was won four times successively by J. C. Hill & Sons, of Lloydminster, Alta.

Championship Five Years Running

To take the successes of the last five years. In 1916, at the International Soil Products Exposition at El Paso, Texas, Alberta oats was awarded the sweepstakes, and later, when the same exposition came to be held at Peoria, Illinois, Alberta dropped one place, securing the second prize, whilst the premier honor was divided between her sister provinces of Manitoba and Saskatchewan. In 1918, when the International Exposition was held at Kansas City, Manitoba secured the ascendancy over its sisters and carried off the first three prizes for oats as well as the sweepstakes for the same crop. In 1919, one of the years in which the wheat championship went to Saskatchewan, it also secured the premier oats honor with first place and sweepstakes. Coming right up to 1920, at the International Livestock and Grain Show at Chicago, J. C. Lucas, of Cayley, Alberta, brought the world's oat championship to his province. In the past five years, Alberta has secured the oat sweepstakes twice, Manitoba and Saskatchewan once each and divided it once. Never once has it left the boundaries of the three prairie provinces.

Barley, which is the other cereal in the production of which Western Canadian farmers have entered largely and pitted their crops against the best of the continent, rivals oats in its list of awards. For four successive years at the expositions of the International Dry Farming Congress held respectively at Lethbridge, Alta., Tulsa, Okla., Wichita, Texas, and Kansas City, Mo., the first prize was secured by an exhibit of Western Canadian barley. To follow this up, Manitoba carried off the first three prizes for this crop in 1918.

Taken in conjunction with the wheat

records this is a truly remarkable showing, giving Western Canada nearly every cereal honor for a number of years against the competition of the world's first farming areas. And when it is considered that the huge tract, which includes the farms which raised these champion crops, is yet to a great extent undeveloped, the achievement is still more remarkable and augurs a wonderfully productive future for the time when ever growing settlement shall have broken up the waiting millions of fertile acres.

British Columbia's Berry Crop

Prospects for the 1921 berry crop in British Columbia were never brighter, and the only thing that can hinder a record yield will be a severe spring frost. It is estimated on reliable authority, that the acreage under berry cultivation this year amounts to 2,500 acres. Of this area one thousand acres will be planted in raspberries, as compared with six hundred and twenty-five acres last year; strawberry acreage increased from 850 acres in 1920 to 1,447 acres this year; the balance of the area will be planted in other small fruits such as blueberries, gooseberries, blackberries, etc.

With an average of two tons to the acre, the production of berries will be approximately three thousand tons. Put in more concrete form, it means that it would take a train of five hundred freight cars to contain the prospective 1921 British Columbia berry crop. Owing to their bulk, a freight car will only hold about six tons of small fruits.

During the past few years, a number of co-operative berry marketing organizations have handled British Columbia's berry crop. Owing to overlapping and the need for greater unity amongst berry-growers, due to the constant fluctuations of the market, it was decided to merge these different associations into one body. At the present time, nine of the thirteen existing co-operative companies have joined this new establishment and the other four are expected to come in shortly.

This association will be a pure and simple sales organization. It will endeavor to enlarge the present market for British Columbia berries. Special efforts will be made to increase the prairie demand, where the bulk of the crop is shipped. A larger quantity of small fruits than hitherto will also be turned over to provincial factories to be made into jam.

The price that should be realized for this year's crop will be approximately one-third less than last year's price. This will be offset by the increased production, which, it is estimated, will be 50 per cent. greater than 1920, when the crop brought in \$1,000,000. The grower will have to take less for his berries, which he can afford to

do, and at the same time make just as big profits, due to the decreased cost of production and the increased value of the dollar.

Railroad Development Convention

The Thirteenth Annual Meeting of the American Railway Development Association held last month in New York brought together representatives from practically all United States roads as well as delegations from the Canadian Pacific and Canadian National lines. Interesting papers on all phases of industrial, agricultural, immigration and publicity matters were read and discussed, and brought out an interchange of ideas demonstrative of the value to the railroads of such periodical meetings.

It is evident that Canadian railroads are not behind their neighbors to the south in colonization methods and operations. Unlike Canada, United States lines are handicapped by not owning the agricultural lands through which they run, and are not, therefore, in a position to handle their settlers from steamer to train and from train to farm in the same personally conducted manner as Canadian roads do. Industrially, methods are more or less alike both in collection and distribution of data to prospects and their "follow-up" and in advertising, but agriculturally—again on account of the United States roads not owning the lands they are colonizing—Canadian methods appear more comprehensive and aggressive.

Interesting addresses dealing with agricultural and industrial development on the Canadian Pacific Railway were delivered by Thomas S. Acheson, General Agricultural Agent, Western Lines, and G. W. Curtis, Industrial Agent, Eastern Lines, Canadian Pacific Railway, and are here reproduced. It must be borne in mind that in the brief time allotted to each speaker for the presentation of his address, it was impossible to more than touch lightly on the subjects in question. Both papers were well received and brought forth keen discussion during the full limit of time permitted for that purpose.

The retiring President, Mr. H. O. Hartzell, Manager Commercial Development, B. & O. R.R., Baltimore, Md., handled the meeting well, and was ably assisted by J. M. Mallory, Industrial Agent, Central of Georgia R.R., Chairman of the Industrial Committee, and Mr. W. H. Olin, Supt. of Agriculture, D. & R.G.R.R. Acting Chairman, Agricultural Committee. There will be a semi-annual meeting in Chicago next November and a general convention at Denver, Col., in May, 1922. George E. Bates, Assistant to General Manager, Industrial Development, D. & H.R.R., Albany, was elected President, with James Jackson, Industrial Agent, Georgia R.R., Augusta, Secretary.

Interest in things Canadian amongst the

assembled delegates leads to the belief that an invitation from Canada for an early future meeting will meet with strong support from the Association.

Agricultural Development on the C.P.R.

By Thomas S. Acheson, General Agricultural Agent, Western Lines, C. P. R.

Inasmuch as the majority present this afternoon are residents of the United States, I am approaching the subject assigned me with the assumption that there is a great deal about your Northern neighbor with which you are not familiar, and would desire enlightenment. I will concede that during more recent years a more comprehensive knowledge of the Dominion of Canada has been and is being acquired, but there was a time, and not so far distant, when residents of your cities would make anxious inquiry about long lost brothers, and designate their last address as Alberta, or some other one of our large and magnificent provinces, and expect them to be promptly located by the provincial directory. This afternoon, in the limited time assigned me, I will as briefly as possible outline to you, "Methods of agricultural development work on the Canadian Pacific Railway."

Eliminating the numerous historical features leading up to it, a charter was granted to the Canadian Pacific Railway Company, and on February 15th, 1881—just forty years ago—was undertaken Canada's greatest venture and to-day her greatest railway system. The broad vision of the handful of men connected with the corporation willing to undertake construction of a railway system into a vast country, only then occupied by hunters and trappers, received much ridicule from many sources at the time. The Government, in order to induce the building of a railway, gave the Company, then known as the Syndicate, all the odd numbered sections of land in a belt twenty-four miles wide on each side of the main line, from the present City of Winnipeg to the Rocky Mountains, twenty-four million acres in all, sufficient for a nation.

From the beginning of construction of the railway, due thought was given to the magnificent agricultural possibilities of the great prairies to be traversed, ways and means of developing this huge area, inducing settlers to locate on land and satisfying them and their needs, and forty years record of unrelenting endeavor in this direction has earned for the Canadian Pacific Railway Company the title of "Canada's Greatest Colonizer."

A Fair and Square Policy

You may well ask how was such a tremendous task accomplished. From the outset a fair and square policy was adopted by the Management, one which they have maintained ever since. Whilst the Company might have realized immense sums of money by disposing of large areas of the land to eager speculators, they refrained consistently from doing so. In accordance with their policy of settlement and development, the lands were put on the market at a flat and nominal price of \$2.50 per acre, with a rebate for every acre put under cultivation of \$1.25. The Company through its land department has built up step by step, surely and safely, a business-like policy which has at once served the best interests of the country, and the settlers upon the land. It has not all been smooth sailing through the years, as Canada suffered depressions as did other countries at intervals. There was, for instance, the period when the price of wheat went down to the lowest figure on record, and when the land department accepted wheat in settlement of deferred payments under their land contracts, giving credit to their purchasers' accounts at fifty cents a bushel when the market price of wheat went as low as thirty-seven cents.

There were times, too, when owing to the low price of wheat, or for local reasons which specially affected certain

districts, the settlers were utterly unable not only to make any payment to the Company on account of their lands, but could not even settle their taxes, and some of the municipalities were very seriously affected financially on this account. The Company carried over the payments due them, and from time to time advanced on their purchasers' accounts very large sums in settlement of taxes.

In the early days of the West, the importation of pure-blooded stock was, of course, a very difficult matter, and one not lightly to be undertaken by an individual farmer, and consequently the live stock in many districts was pretty well run down. To remedy this state of affairs, the Company distributed several hundred pure bred bulls and boars to farmers at different points on the understanding that for two years their neighbors were to have the benefit of their services free, and at that time the stock became the property of the farmer. This gave a powerful and much needed impetus to the live stock industry, and the influence of these animals is still noticeable in the districts where they were placed.

Brought in Many Desirable Settlers

Later on, as the country developed and new districts were opened up, the land department inaugurated extensive systems of advertising the country, and by agency arrangements all over the world brought in very large numbers of desirable settlers. Under the auspices of the department, too, various colonies were formed in different sections of the country, and during their earlier stages were nursed along and finally have become the centres of prosperous settlements. During all these various periods, the Company has disposed of its lands under terms and conditions which seemed to be suitable to the times, and which were calculated to produce the best results all round, and eight or ten years ago, when the time appeared to be ripe, it contributed largely to the tremendous influx of the last few years by interesting several large colonization organizations in Western Canada, by selling to those organizations tracts of land at low rates and thereby obtaining for Western Canada the benefit of the machinery which had been largely instrumental in settling up the North-West States.

There is one feature of the policy of the Company which calls for special reference, and that is the system which has been followed in pricing land and the regulations under which the lands have been disposed of, the policy in this regard having had a very considerable effect on the welfare of the country from the point of view of speculation, as it affects permanent and beneficial settlement and development. In this respect it may be said that the Canadian Pacific Railway has many times, at periods of undue land excitement, acted as a safety valve, and have been able to safeguard the best interests of the country. Controlling a vast area of land suitable for settlement, the officials of the land department, by carefully watching the signs of the times, and by following closely their well-marked plan of building up agricultural communities, have been in a position to see when the limit of legitimate speculation has been reached, and have, without working any hardship to anyone, and without putting any obstacle in the way of desirable investment, been able, in a very large measure, to direct the land business of the whole country into proper channels.

Regulations Governing Land Sale

You will be interested in the regulations governing the sale of land by the Canadian Pacific Railway, which is now sold under two general policies: (a) with settlement conditions; (b) without settlement conditions. The settlement conditions entail that the purchaser will reside on his land for at least six months during each of the first five years after the sale of land; that he will build a house to cost not less than three hundred and fifty dollars and a barn capable of accommodating four horses and four cows, which buildings are to be insured against fire; that he will sink a well and fence the land; that during the first year he will break and crop at least twenty-five acres

in each quarter section, after which at least fifty acres are to be kept under cultivation in each quarter section; that he will also keep at least three milk cows. In lieu of cultivating the land, however, the purchaser may maintain ten head of cattle or seventy head of sheep for each quarter section.

(1) Terms of payment are one-tenth of the purchase price (including improvements or loan, if any), to be paid at the time the final application is made.

(2) At the end of the first, second and third years, interest on deferred payments at six per cent. No payments on account of principal will be required to be made during the first three years of occupancy.

(3) The balance of the purchase price will be divided into sixteen annual instalments; the first instalment will be due and payable at the expiration of four years of occupation with interest at six per cent. and annually thereafter.

(4) Providing satisfactory evidence is produced that the above settlement conditions have been complied with at the end of the first two years from the date of contract, the Company will reduce the rate of interest from six to two per cent. during these two years only.

Under this policy it will be seen that the terms of sale are spread over a period of twenty years in all. The smallest acreage that is sold is one hundred and sixty acres, while no purchaser will be allotted more than two sections or twelve hundred and eighty acres. The price of land averages from \$18 to \$20 an acre. Irrigable land from \$50.

Irrigation Enterprise

Rich as the entire Western country is, there are areas where diversified and more intensive farming is essential. In some of these large districts, a splendid and abundant water supply being available, the Canadian Pacific Railway have gone into irrigation on a large scale. It would require considerable more time than at my disposal to go into the detail of this, but I will quote some figures and give you an idea of the extent of the work done and the immeasurable benefits obtained.

In Southern Alberta the Canadian Pacific Railway has over 4,200 miles of irrigation ditches, with an irrigated area of 743,520 acres, developed at a cost of over seventeen million dollars. Last year a system to serve 17,000 acres was constructed in a special area which had been affected in previous seasons from drouth. Other districts in the provinces of Alberta and Saskatchewan have been surveyed by Federal and Provincial Governments and it is anticipated that development on a large scale will have immediate consideration. The advantages of irrigation have been made apparent in the remarkably greater increase in soil productivity, frequently doubling and trebling the averages formerly attained minus irrigation. We have found, without exception, that irrigation farming is the most intensive, most successful, and most profitable form of scientific agriculture.

Before leaving this subject, I would remark that conditions with respect to irrigation projects, I am told, differ from those prevailing in the United States, inasmuch as our Government controls all the water, and for many years have, under their Hydrometric Branch, kept careful records of all streams. No works can be constructed without Government sanction, based on thorough engineering investigations as to the feasibility and soundness of the projects and their approval of the construction details. The Government even goes further and gives approval on their part of the character of the lands to be classified or sold as irrigable.

Educational Propaganda

With customary progressive spirit, and realizing the rapid strides in agricultural methods, we are not losing sight of the educational side and the necessity of keeping in immediate touch with the rural districts. By means of the Company's own splendid farms, maintaining a staff of agricultural experts, operating special instruction

trains gratis annually, and giving a general hearty co-operation and helping hand to our people, we have enjoyed and continue to enjoy their esteem, appreciation and patronage. Likewise, in association with the Departments of Agriculture of the Provinces and Dominion and their numerous specialty branches, campaigns are carried on at intervals when deemed to be timely and essential. The "Better Farming" train operated by the Canadian Pacific is called the "Agricultural College on Wheels," and includes instruction in every phase. Specialists in various branches such as grain growing, pure-bred livestock, dairying, domestic science, horticulture, etc., are provided, and every facility is given for the purpose of education and instruction, with demonstrations, benefiting the settlers by practical advice and assisting them toward making a thorough success of their farm undertakings.

The most recent train operated concluded in March a trip of over 5,000 miles and, in conjunction with a "Dairy Special" operating simultaneously, was attended by thirty thousand interested people. The younger generation is not overlooked, as Boys' and Girls' Clubs exist practically throughout Western Canada, and are fostered in their efforts toward better productions of soil products as well as pure-bred livestock.

The possibilities of agriculture throughout Canada, but with emphasis upon the newly settled provinces west of the Great Lakes, are unlimited. While Canada has half as much of the arable land as the United States, viz.: 400,000,000 acres, only one-tenth of this is under cultivation, yet, notwithstanding this, stands fourth among all nations of the world in railway mileage and first in proportion of mileage to population.

Twenty Thousand Miles of Track

The Canadian Pacific Railway consists of 19,662 miles of track, including its subsidiary lines, of which 4,963 miles are in United States territory. Agricultural and livestock interests are followed closely in this huge contiguous territory, and while perhaps more special attention is paid to the western provinces, this, as you will naturally conclude, is due to the greater needs of the newer settlers who, to a greater degree incline to favor the prairie provinces, and British Columbia.

Time does not permit more than passing reference to the latter province, and to do justice to its magnificent agricultural resources the subject would need be dealt with exhaustively. British Columbia fruit and vegetables are world renowned and the volume of production is increasing annually. Our Company, in a similar manner to that obtaining with respect to the prairie provinces, maintains close relations with fruit and produce growers and their needs, also with a view to the increase of cultivated areas.

Canada has the biggest ranch of the world, 75,850 square miles, for raising caribou and musk-ox, away up in the far North. This leads me to dwell for a moment or two upon the subject of livestock on the farms. We are becoming more interested and active from year to year in the matter of pure-bred stock, and breeders are being encouraged in every possible manner to eliminate the scrub and replace with pure-bred animals.

The Canadian Pacific operates the largest pure-bred Holstein herd in Canada specializing in combined production and quality—this is on their 10,000 acre farm at Strathmore, Alberta, the finest demonstration farm in Canada. One million dollars' worth of stock has been sold to settlers and the latter still have opportunity of obtaining high class sires at reasonable prices for stock improvement. On the same farm a poultry plant is operated and holds the highest individual record for Canada in Dominion egg-laying competition. Honors in the home country never satisfied Canadians, so they have been going and continue to go beyond in quest of them, frequently making the rendezvous, either your Kansas City or Chicago. You are all familiar with the repeated winnings of Canadian exhibitors in the United States, with the world's records in wheat and oats, numerous individual records with Clydesdales, not forgetting that "Wee Donald" won

the Grand Championship at the last International, and also the splendid showing of steers from the Alberta University.

All of these attainments are as deeply appreciated by the Railway Company as the owner and exhibitor. We lend our best efforts toward better production; the Company has built up immense agricultural communities throughout the territory served by its lines, and appreciates that the continued progress and success of its patrons means permanent and profitable business as a transportation company. A striking proof of its success is to be found in the comparatively high financial standing of the Canadian Pacific Railway even at this particular period of financial stringency and uncertainty.

Industrial Development on the C.P.R.

By G. W. Curtis, Industrial Agent, Eastern Lines, C. P. R.

I have been asked by the President of this Association to prepare a paper on the Industrial Development of the Canadian Pacific Railway, with which concern I am associated in the capacity of Industrial Agent. By this I understand that you would like to hear something about our methods of locating manufacturers on our lines and securing new business for the road through the development of mineral deposits, etc. I will not touch on the agricultural phase of this work as I notice our Mr. Acheson, General Agricultural Agent of the Company at Winnipeg, is to speak on this.

As most of you are doubtless aware, the Canadian Pacific Railway has a mileage of 14,698 miles, and 4,963 miles in the United States. Such a giant organization has numerous ramifications, branches and departments, off-shoots again of these—so many that it is a difficult matter to tabulate them—individual cogs which go to make up the perfectly working mechanism. The majority of them are purely railroad activities, but many have as great an appeal nationally and are engaged in the active development of the Dominion whilst indirectly pushing the progress of the Canadian Pacific Railway. National and railroad development must inevitably go hand in hand, and this is the *raison d'être* of the establishment of certain of the Company's works.

The Industrial Department, Eastern Lines, with which I am connected, has particularly to do with the location of branch factories of American and English concerns who are desirous of expanding and manufacturing in Canada. When an industrial concern is known to be so desirous of establishing, I immediately get in touch with it, either by a personal call or sending one of our travelling men, and point out to them how they may save both time and money by taking up this question through our Department. Prior to the institution of this work, a manufacturer who was desirous of establishing a Canadian branch plant, sent over a representative who visited as many different Canadian towns as he thought necessary or advisable, inspected sites, deposits, and made all pertinent inquiries, and prepared a report for his employers accordingly. In so doing he spent a good deal of unnecessary time and money, hurriedly picked up a lot of information which might be and might not be strictly accurate and must inevitably be conflicting, and altogether did not get the utmost satisfaction for his pains or the benefits of the most expert advice. The establishment of the Industrial Branch has changed all this. By getting into touch with us now and telling us in confidence what his requirements will be in the nature of labor, power, raw material and other factors of his particular line of manufacture, the manufacturer is able to get the most expert advice from our own general knowledge of the Dominion and its resources and from the information kept on file in the office, which is the result of investigations carried out by men who are specialists in their particular lines. When a digest is made of the whole situation as it affects him, he is given the names of four or five towns which will bear investigating, thus eliminating a great deal of unnecessary travel on the part of the manufacturer or his representative.

Assist Prospective Manufacturer

Additional information kept on file which is of great assistance to the manufacturer considering Canadian establishment, is that of empty factories, plants which may have become vacant and available through a variety of causes. An example of this is the large number of munition plants which, with the termination of the war, became available for other work. A number of wide-awake United States manufacturers, who were on the look out for premises in Canada, have been located in the past three years in empty munition plants, so much so, in fact, that the supply is now almost entirely exhausted.

One consideration in locating, and possibly the most important in making a decision of this nature, is that of railway rates between different points, and we are in a position to furnish comparative rates between all points, eliminating a great deal of correspondence and effecting a saving of considerable time.

The Industrial Department exists, in fact, for the free use of foreign manufacturers selling in Canada who have awakened to the fact that in order to enter into competition with Canadian manufacturers it is necessary for them to establish branch plants here. As a matter of fact, in view of the Dominion's tremendous possession of water power and the cheap and contented Canadian labor market, a large number of United States manufacturers have arrived at the conclusion that it not only paid them better to manufacture in Canada for the local trade but for export to British possessions and all other parts of the globe.

In addition to its tremendous railroad mileage, the Canadian Pacific Railway operates steamships on the Atlantic and Pacific and on the inland lakes, linking up its steel where topographical conditions have broken it and giving an uninterrupted service from points in Canada to many parts of the globe. This greatly facilitates the export trade and is to the enormous advantage of the manufacturer engaging in the export trade who is located on the Company's line. Shipments can be billed from a point in Canada to other points within the Dominion, to the United States, Europe or the Orient, and the agent at the point of distribution bill the cargo through, combining railroad and ocean rates, thus ensuring rapidity in an uninterrupted journey to its ultimate destination. At the end of December last there were forty-three of these ocean and coastal steamships, and since that time other vessels have been purchased to run on the Atlantic and Pacific. There are in addition, serving in Canada, twenty-one lake and river steamers.

Establishment of Bureaus of Information

To give every possible assistance to those seeking information on Canada on any conceivable phase, the Department of Colonization & Development maintains Bureaus of Canadian Information at its offices in Montreal, New York and Chicago. Here there are well equipped libraries of matter on all phases of Canadian life which are at the disposal of visitors, and inquiries of every nature are answered by staffs with the aid of the wealth of material the libraries contain, and drawing upon their own wide experiences covering many sides of Canadian progress. In the brief time these Bureaus have been in existence, they have adequately justified themselves in furnishing answers to a multitude of inquiries. Business houses, colleges, students, intending immigrants, all have found them of the utmost assistance in extending to them matter they are in search of. In the establishment of these Bureaus of Information we do not, by any means, limit our information to events and developments along our own lines but collect and distribute authentic information on all Canadian provinces, all parts of Canada. Naturally, we are anxious to locate both industries and immigrants along our own lines, but in cases where the inquirer desires facts regarding parts of the country foreign to our system, we give him without reserve, the fullest possible information.

It is not unreasonable to say that with a system so

large and far-reaching as the Canadian Pacific, any progress or development that affects Canada must, in one way or another, affect our system, and that the future progress of the Canadian Pacific is bound up intimately with the future progress of Canada as a whole.

Supplementary to these Information Bureaus, we issue monthly a small publication or semi-house organ which covers, as far as possible in the limited space available in its twenty pages, developments in each of the nine provinces—agricultural, trade, mineral, fishing, forestry, furs, water powers, municipal affairs, etc., etc. This goes to all of our home and foreign representatives, is indexed and kept on file and is a ready reference to things Canadian for intelligent reply to the hundreds of inquiries that weekly come to their offices. As it may interest this Convention to see this monthly publication, "Agricultural & Industrial Progress in Canada," a limited number have been distributed on the seats in this hall.

It is, of course, obvious that the maintenance of an Industrial Department by a railway is not an altruistic work or one purely national. The establishment of new industries on its lines means the conveyance of more raw materials, and, after manufacture, the transportation of the finished article. The transportation of the finished article means an increase in freight earnings with little corresponding increase in the cost of haulage. Considering the almost illimitable wealth of raw material which Canada possesses and the minute portion which is yet exploited, no country at the present time offers such great advantages to the manufacturer who will exploit them.

Inducements to U. S. Manufacturer

One of the greatest inducements Canada holds out to manufacturers considering establishment is the wealth and availability of water powers and their supply of light and power at low cost. Canada leads the world in her wealth of water powers and they are widely distributed over the various provinces. Though only a fraction of that available has yet been developed or utilized, sufficient power for industrial needs is generated at all centres for supply to the manufacturer at low rates.

There has been at all times, more especially marked since the period of the war, a desire on the part of the Canadian public to purchase "Made-in-Canada" goods, and the adverse balance of exchange existing between Canada and the United States has had the effect of strengthening this and increasing the anxiety to secure only goods manufactured within the Dominion. This has been an added inducement to the argument for the establishment of United States branch houses in Canada. There are several other reasons, prominent among which are the preferential tariffs in trading with the many parts of the British Empire which can be taken advantage of by Canadian manufacturers.

In our work it is our endeavor to secure the closest co-operation with Boards of Trade and similar organizations in the various towns along our lines, and we are in a position to be of considerable assistance to them in many ways. For instance, we may receive a letter from a certain town to the effect that it has been negotiating with an industrial concern in the United States which is desirous of locating in Canada and is looking for bonuses, tax exemptions, etc. Our practice then is to write our agent in the nearest place to this town location to secure a report on the standing of this firm, and in very many cases after investigating the manufacturer we are in a position to fully advise the town of the business standing of the firm in question and their desirability or undesirability as a future Canadian industry.

Most of the principal cities and towns of Eastern Canada have, in the past few years, appointed Industrial Commissioners of their own who are hot on the trail to secure new industries for their particular towns. In co-operation with Boards of Trade, our Industrial Department and other organizations working for the same end, notable work has been accomplished, and it may interest you to know that in the past few years approximately six hundred branch factories of United States industries

have located in Canada with a capitalization of about \$320,000,000. As an indication of the trend of the times, I might tell you that in our Montreal and Toronto offices we have at the present time several hundred prospects who are looking into the question of operating branches of their industries in the Dominion as soon as the financial situation rights itself. A large percentage of these, I have not the slightest hesitation in saying, will develop from prospects into actualities.

Co-operation with City Industrial Agents

In such a comprehensive work, covering such a multitude of towns, care has to be taken not to unduly boost one location against another which induces civic jealousy and a host of minor ills. It is here that the Industrial Commissioner of a town comes in handy. We can refer the manufacturer to four or five likely locations and then it is incumbent upon the towns themselves to convince him or his representative that they have all the requisites he is desirous of finding before locating his plant.

The Industrial Department on Western Lines, under Mr. John F. Sweeting, Industrial Agent, Winnipeg, is run on very similar lines, devoting its attention to the industrial colonization of the Canadian Pacific Railway lines from Winnipeg to the Pacific Coast.

There is one phase of Western industrial development which is probably different to that which exists on most parts of the American Continent, and it is caused by the fact that the Canadian Pacific Railway in constructing lines throughout the prairies has had to establish and build up townsites along its main and branch lines. You will see from this that the Industrial Agent's work is extended to cover a location of initial retail businesses in such townsites, and from year to year to add to their requirements by introduction of additional businesses, or where natural resources are available capable of commercial development, interest capital to such end.

Mention might be made here of another branch of the Canadian Pacific Railway engaged in another method of colonization, the Department of Colonization & Development under Col. J. S. Dennis, who is probably known to a number of you here present. By an energetic system of propaganda through the medium of literature, exhibitions, motion pictures and other publicity, it is their endeavor to colonize the vacant tracts of Canada with people from other lands, whilst a branch of the Department is interested in investigating natural wealth, promoting new industries and fostering the industrial activity of the Dominion by every means.

Public Confidence in Industrial Agents

No doubt those members of this Association who are carrying on similar work in the United States have found, just as we have in Canada, that the average business firm places a lot of confidence in the Railroad Industrial Agent and accepts information supplied by such a source at its face value, and is satisfied that we err towards conservatism rather than any idea of boosting the data which we supply.

There is a tremendous interest for United States financiers at the present time in the newly discovered oil fields at Fort Norman into which much American wealth is pouring. Here, too, is the Canadian Pacific Railway interested to an extent, for the Edmonton, Dunvegan & British Columbia Railroad now operated by this company penetrates the Peace River Country and offers the only railroad access to the oil fields.

In the year 1919, two hundred American branch factories were established in Canada by United States firms. Figures for last year are not available, but from my personal experience there is not the slightest doubt but that this number was well left behind. Prospects at the present time are excellent for a continuance, and I look for an increased industrial interest in Canada by United States business men this year in view of the ever-increasing advantages offered by them to establish there.

This, briefly, gentlemen, covers the activities of the Industrial Branch of the Canadian Pacific Railway, and I trust I have made it clear to you how it aids United States manufacturers to select the right location for their Canadian branches from all standpoints.

Canada's Trade by Countries, 1920-21

The trade returns for Canada for the year ending March 31st, 1921, are unusually interesting in that they indicate the new direction in which markets lie. Markets are the paramount question, for both in respect to raw and manufactured products the Dominion is producing a great deal more than can be consumed at home. The question of markets is the more interesting because the rate of exchange is militating so against exports to certain countries which formerly bought heavily of Canadian products, that other markets must, if possible, be found.

Total exports were \$1,210,428,119, as compared with \$1,286,658,709 for the year 1919-20. The decrease in the exports of domestic exports was not, however, so large, amounting to approximately \$50,000,000. On the whole this is to be attributed to decline in prices more than to a decreased volume of shipments. Dealing only with exports of domestic produce, the United States was by far Canada's best customer last year, having taken \$542,304,456 worth of commodities as compared with \$464,028,183 for the preceding year, or approximately \$78,000,000 more than in 1919-20.

The United Kingdom was Canada's second best customer, having taken \$312,842,921 worth last year as against \$489,152,921 in 1919-20, and \$540,750,977 in 1918-19. During the last three years, while exports to the United States have increased from \$454,873,170 to \$542,304,456, those to the United Kingdom have decreased from \$540,750,977 to \$312,842,921.

Trade with the Empire

The British Empire took last year a much less volume of commodities than it did during the preceding year. The figures were \$403,470,602 in 1920-21 and \$561,788,003 in 1919-20. This is explained chiefly by the decline in exports to the United Kingdom. During the year, exports to Australia increased by \$6,750,000; to British Guiana by \$585,000; to British South Africa, \$8,000,000; to the British West Indies, \$2,161,000; to Hong Kong, \$657,000; to Newfoundland, \$520,000; to New Zealand, \$4,900,000. To other portions of the British Empire, there was a falling off to the extent of \$3,000,000.

Turning to other countries, exports to Italy increased by nearly \$41,000,000; to the Netherlands by \$15,000,000; to the Argentine by \$2,000,000; to other countries by \$5,750,000. On the other hand, there were some notable decreases. Exports to France fell from \$61,108,000 to \$27,248,000; to Greece from

\$29,588,000 to \$20,834,000; to Japan from \$7,732,000 to \$6,414,000.

Coming to imports, those from the United States increased by \$55,516,112; from the United Kingdom by \$87,148,000; from British Guiana by \$1,676,000; from British South Africa by \$690,000; from the British West Indies by \$2,769,000; from Newfoundland by \$640,000; from New Zealand by nearly \$800,000; from Belgium by \$3,750,000; from China by \$683,000; from Cuba by \$13,000,000; from France by \$8,376,000; from Italy by \$750,000; from the Netherlands by \$2,000,000. Imports from the British East Indies declined to the extent of \$2,000,000; Argentine by \$1,000,000 and Japan by \$1,878,000.

Imports from British Empire

In the year just closed, Canada imported from the British Empire \$265,877,691 of commodities out of a total of \$1,240,125,056 from all countries; in the year 1919-20, the amount was \$174,351,659 out of a total of \$1,064,528,123; in 1918-19, it was \$123,671,540 out of a total of \$919,711,705. In other words, whereas in 1918-19, 13 per cent of Canada's imports were drawn from the British Empire, last year the percentage was 20. At present it seems improbable that this percentage will be maintained. The marked increase during the year just closed was due to heavy buying in Britain during part of the year, which has since fallen off. The extent of the decline is to be seen in the trade returns for March, when the imports from the United Kingdom were \$16,373,874, as compared with \$25,460,316 for the preceding March.

Wheat supplied over 25 per cent of the total value of the exports, or \$310,952,138 worth, other grains being valued at \$33,000,000. Unmanufactured wood came next with \$115,684,475; followed by printing paper, \$78,922,137; wood pulp, \$71,552,037; flour, \$66,520,000; iron and steel, \$56,680,000; cheese, \$37,146,000; fish, \$33,130,000; bacon and ham, \$31,492,000; and animals living, \$25,883,663.

Among the imports, iron and steel easily led with \$208,288,669, cotton being next with \$99,816,594. Then followed sugar and molasses, \$86,070,230; bituminous coal, \$72,239,952; wool, \$67,017,640; anthracite coal, \$39,058,148; silk, \$29,720,792; vehicles, \$27,694,577; wood, \$30,237,528; chemicals, \$24,621,000; and breadstuffs, \$21,014,801.

Country's Trade Widening

On the whole, the returns show that the basis of the country's trade is widening. It is true that last year approximately two-thirds of its total value was with the United States; but on the other hand, the proportion of trade with foreign countries generally increased. While the volume of trade generally with the Mother Country has declined, still more is being done

with the other portions of the Empire. The premium on American funds has strongly stimulated commercial intercourse with the United States, and as the premium will undoubtedly continue for some time, it is reasonable to conclude that, in spite of the temporary obstacles, the volume of trade between the two countries will continue to be large. The indications at present are that the value of imports from the United States will appreciably decline during the current year, that process now being well under way.

Shipbuilding in 1920

With a coast line of such tremendous length on both Atlantic and Pacific, and the most extensive fishing grounds in the world, it is but natural that shipbuilding should be an important industry to the Dominion of Canada. At the end of the year 1918, when a survey was conducted by the Dominion Bureau of Statistics of figures of manufacture, it came within the first ten industries with capitalization of \$56,229,033 and an output of \$74,799,411, and has doubtless since that time assumed a higher place relatively, due to the decline of what were purely war activities which had developed abnormally, and the successful building years of 1919 and 1920. Canada has now attained third place amongst the nations of the world as a shipbuilding country.

According to announcement by the Department of Marine and Fisheries, the gross tonnage built in 1920 was 204,635 tons, representing 351 vessels of one kind and another. Vessels built and registered in Canada during 1920 numbered 329, of which 121 were sailing vessels, 53 wooden steam vessels, 119 wooden gas vessels, 35 steam metal vessels and one gas metal vessel. Steam metal vessels accounted for 120,127 tons; wooden sailing vessels, 22,758; steam wooden vessels, 12,829 tons; gas wooden vessels, 3,495 tons; gas metal vessels, 116 tons—a total of 159,325 gas tons.

Quebec Led in Tonnage

Vessels built but not registered in Canada during the year were 22 in number. Thirteen were wooden steam vessels of 13,829 tons; 9 steel steam vessels of 31,135 tons; and one wooden sailing vessel of 348 tons.

British Columbia with 138 vessels to her credit led the provinces in the number turned out, but Quebec, though credited with only 96 vessels, led in gross tonnage with 103,339 tons as compared with British Columbia's 66,561 tons. Nova Scotia turned out 90 vessels, almost all small; Ontario is credited with 17 vessels; New Brunswick accounted for 5; Prince Edward Island, 4; and Saskatchewan, 1. Alberta and Manitoba do not appear at all in these returns,

their activities being confined to lake and river boats.

At the 31st of December, 1920, there were 7,909 vessels of all kinds on the Canadian register, of which 3,623 were sailing and 4,281 operated by steam. The gross tonnage of sailing vessels was 505,630 and of steam 1,105,010 tons, making a total tonnage of 1,610,640 gross and 1,151,880 net tons.

Pulp and Paper Industry in Ontario

Second only in importance to the province of Quebec is the pulp and paper industry in Ontario where there are 16 paper mills, 9 pulp mills, and 13 combined pulp and paper mills, a total of 38 establishments out of the 99 mills in the entire Dominion, according to the census of the Dominion Bureau of Statistics completed at the end of the year 1919. They represent a capital investment of \$95,281,040 out of a total of \$264,581,300 and give employment to 8,571 persons, exclusive of woodsmen, out of a total of 26,765 so employed throughout the Dominion. They distribute in wages and salaries \$11,666,612 a year, out of a total of \$32,323,789.

In 1919, Ontario produced 498,792 tons of paper, 246,430 tons of chemical pulp, and 351,572 tons of mechanical pulp, or approximately fifty per cent of the paper, thirty-four per cent of the chemical pulp, and thirty-five per cent of the mechanical pulp produced in all Canada. The value of the paper produced in the province amounted to \$39,930,474 in that year, the largest item being 342,254 tons of newsprint paper valued at \$23,958,566. The pulp produced had a value of \$25,435,362. The expansion which the industry in the province experienced in the year 1920 and since that time would materially add to these figures now.

In 1918, the Commission of Conservation estimated the total quantity of spruce and balsam in Ontario at 250 million cords, of which 140 million cords are located upon unlicensed Crown lands, 85 million cords on licensed Crown lands, and 25 million cords on privately owned lands. The Commission also estimated that the extension of the Temiskaming & Northern Ontario Railway from Cochrane to James Bay, when accomplished, would bring into commercial availability an additional 38 million cords, thus giving a huge supply commercially available.

Largest Producing Company in Canada

Among the pulp and paper industries of Ontario is the largest paper producing company in Canada, the Spanish River Pulp and Paper Mills Limited, whose three mills, with the added equipment in process of installation, will have an annual capacity of 203,100 tons of newsprint paper, 10,000 tons of surplus groundwood pulp, 13,000 tons of surplus sulphite paper, and 10,000 tons of boxboards. Another Ontario company,

the Abitibi Power and Paper Company, owns what is conceded to be one of the largest and most efficient paper mills, whose annual output, when completed, will include 120,000 tons of newsprint, 18,000 tons of board, and an excess production of 35,000 tons of mechanical and 18,000 tons of chemical pulp. Several new and important plants are now under construction, and when these are completed Ontario will be a more formidable rival to Quebec in leading all Canada in this important Canadian industry.

As in Quebec, reforestation is a live issue with the larger manufacturing concerns who are following active policies to ensure a repletion of the forests they are denuding. Further steps are anticipated along this line with the co-operation of the government who are still owners of the majority of the land upon which the pulp and paper companies are cutting, and to whom these areas will eventually return.

The pulp and paper industry is an important one to Ontario, the province producing book and writing papers, wrapping paper, tissues, board and many other varieties of paper in addition to newsprint and pulp. These products are largely marketed abroad and bring into the province a substantial revenue from foreign sources. Last year, Ontario received a total revenue of \$2,684,843 from its forest resources. The development of the industry has rendered great assistance to settlers in the bush lands in providing them with a market for their pulpwood, the proceeds of the sale of which gives them a comfortable revenue whilst their farms are attaining a productive stage. It has utilized otherwise unemployed water powers and brought about the establishment of prosperous towns and villages throughout the sparser settled sections of the province.

Insurance in Canada—1920

The year 1920 in Canada was the banner year for the writing of new insurance, according to statistics issued by the Insurance Department. In this respect, life insurance naturally leads with an increase of \$630,110,900, as compared with \$517,863,639 for 1919 and \$307,279,759 for 1918. This increase in new insurance over the amount written in 1918 was equal to more than \$100,000,000.

Life insurance in Canada is now equal to approximately \$300 per capita. Canadian companies got the lion's share of new life business, having written \$387,519,766 against \$314,489,448 in 1919. Foreign, almost entirely American companies, came second with \$227,615,096 against \$192,649,319 in 1919, followed by British companies with \$14,976,038, as compared with \$10,724,872. In percentage of gain, the British companies led with 39 per cent. The total life insurance in effect is \$2,657,037,219; Canadian companies have \$1,664,348,605; foreign, chiefly

American companies, \$915,793,798; and British, \$76,898,816. The premium income of Canadian companies was \$57,212,371; British, \$2,765,829; foreign, or chiefly American, \$30,234,734.

Fire insurance in force increased by approximately \$1,000,000,000 during the year, it also having been the best year experienced in this class in Canada. British companies with old established connections have a long lead over their Canadian and American rivals, though the last mentioned are coming along very fast. The total amount of fire insurance in effect at the end of 1920 was \$5,971,330,272, compared with \$4,923,024,381 at the end of 1919.

The premium income of all companies was \$50,565,856, compared with \$40,031,474 in 1919. The premium income of British companies was \$25,325,678; in 1919, \$20,377,871; foreign (chiefly American) companies, \$17,247,760; in 1919, \$13,237,765; Canadian companies, \$7,992,418; in 1919, \$6,415,838. The fire losses during 1920 were higher than in 1919, having been \$22,931,129 compared with \$16,679,373. The loss ratio for the year was higher than in 1919, having been 45.3 per cent., as compared with 41.7 per cent. The 1920 ratio was, however, well below that for the previous 10 years which had averaged over 50 per cent.

Automobile, Burglary, Hail, etc.

Companies insuring automobiles had rather unfortunate experiences through thefts and collisions, the former being due to the prevalence of the crime wave. Automobile insurance, including fire risk premiums, paid \$2,366,540; losses incurred, \$1,250,241; claims paid, \$1,186,655. Excluding fire risk, premiums paid \$2,886,941; losses incurred, \$1,598,768; claims paid, \$1,506,614. The number of cars increased from 8,937 in 1910 to 408,999 in 1920, while the premiums paid increased from \$80,466 to \$5,253,081.

Burglary insurance experienced a marked increase over 1919, the increase in premiums paid being \$150,000, or 45.3 per cent. The increase in losses paid was \$127,193, or 108%, while the increase in claims paid was \$90,772, or 79 per cent.

Hail insurance companies had a better year than in 1919, the premiums paid being \$5,796,502; losses incurred \$2,370,932; claims paid, \$2,377,801.

Throughout Canada generally, there was a decrease in the cost of plate glass insurance. The premiums paid were \$690,079; losses incurred, \$411,813; claims paid, \$409,393.

Accident insurance premiums paid, \$2,340,732; losses incurred, \$905,033; claims paid, \$949,711. Liability insurance, premiums paid, \$3,161,377; losses incurred, \$1,628,213; claims paid, \$1,535,311.

Tornado insurance presents the rather curious statement of losses incurred, \$29,155; claims paid, \$155,931. This is explained by the fact

that a very heavy storm visited Eastern Canada in November, 1919, but many of the claims were not settled until 1920. The premiums paid were \$158,321.

The total of insurance premiums paid to British and foreign (almost entirely American) companies during the year was in excess of \$80,000,000. Of this, \$47,000,000 went to American Life and Fire companies, and \$28,000,000 to British companies, the remainder being divided among many other classes of insurance companies, the greater part of which are American.

The Industrial Outlook in Western Canada

*By John Sweeting, Industrial Agent, Western Lines,
C.P.R., Winnipeg.*

The movement towards better trading conditions during the past month has been just perceptible, perhaps more noticeable because of growing confidence in the outlook on the part of all classes of producers and distributors. A quicker recovery is likely in the West as crop conditions feature more largely than any other form of industry, and, in a general way, spring seeding conditions are quite fair and in many cases better than for some years past. The season is somewhat late, but the moisture situation is good and the farmers are seeding as much land as possible. There has been enough labor available for farm requirements at fair wages, and men requiring work, who were ready to go on the land, were easily placed.

There has been a steady influx of new settlers from the United States and Great Britain of a good agricultural class, with a fair amount of money and other assets. Many have taken up land, while others of the farm labor class, more especially from the United Kingdom, have secured suitable positions. Colonization efforts looking to adequate and successful placing of people on the land are being carried on with promising results, which will eventually tend to greater stability in Western agricultural production.

There has not been much change in conditions pertaining to factories; practically all are maintaining their output, and differences on question of wage scales have not so far been of sufficient importance to cause any great disturbance. Wages of the building construction trades are still under consideration, looking to a reduction of from ten to fifteen cents an hour, and it appears probable that the new scale will be accepted. In Manitoba, the bringing into effect last year of the Industrial Council has minimized possibilities of strikes, there being a readiness on the part of all classes to submit disputes to the Council in question for adjustment.

Proposed Construction Operations

There has been considerable delay in proceeding with any large construction program,

and it is a little difficult at the time of writing to forecast to what extent operations of this kind will be carried out during the year. There are a large number of warehouses, residences and public buildings required and proposed construction work has been featured at a considerable figure, but just what proportion, or whether the whole program will or can be carried out during 1921, cannot at this stage be stated.

Mining operations are still quiet and more immediate developments are dependent on prices; surveys are to be started with a view to ascertain mineral areas and values thereof on Vancouver Island and also covering a large area of the British Columbia mainland country from the Big Bend on the Columbia River north of Revelstoke to the boundary country in the south, this area being known to contain a very large quantity of various kinds of mineral that have not yet been sufficiently prospected to determine their actual or potential values.

In considering existing conditions, cognizant with all factors likely to affect the West, it would seem that though slowly, yet surely, an improvement is evident in trading, with the possibility of average conditions during the last half of this year.

The Fur Industry in Manitoba

By Robt. C. Wallace, Commissioner of Northern Manitoba.

That territory, which is now known as Western Canada, first attracted British capital owing to the value of the peltry which the country could supply. Thus it was that the Honourable The Company of Adventurers, trading into Hudson Bay, were able to obtain support in high quarters, and to show, after a few years, very substantial profits on their business operations.

The Hudson's Bay Company has now operated in Canadian territory for more than 250 years, and the profits from the fur department of their manifold activities are still very substantial. In their activity in Western Canada, the part played by Manitoba soil has been the predominating role. On establishing on the shores of the Hudson Bay, Churchill and York factories, both of which posts are now in Manitoba, they became important posts on the West coast. When, a century later, the inland post was established at Cumberland House in order that the trade of the interior be directed to Hudson Bay and away from the Montreal fur companies, the route for supplies through the Hayes, Nelson and Saskatchewan Rivers was again wholly in Manitoba. When finally the territory controlled by the Company was handed over to the British Crown, the headquarters of the great company, whose posts extend from coast to coast and from the International Boundary to the Arctic Sea, were

established in the City of Winnipeg, in whose early beginnings as Fort Garry the Company has had so great a part.

Rapid Settlement of Manitoba

The rapid settlement of Southern Manitoba by an agricultural population attracted by the far-famed reputation of the Red River soil, in time eliminated the fur-bearing animal from that part of the province. The beaver were greatly reduced in numbers, and now for many years it has been declared illegal to trap beaver except in Northern Manitoba where beaver are still plentiful. Interest in the fur industry in Manitoba has consequently centred more and more in the northern and eastern sections of the province, which have not been colonized by an agricultural population and where the forests are yet to a large extent intact. Even in this very sparsely populated territory, close seasons are observed on all fur-bearing animals and are strictly enforced by the game wardens.

The Indian and half-breed population, who, except during the periods of very high price on furs, form by far the most important section of the fur trappers, fully realize the necessity of protecting fur-bearing animals, and may usually be relied on to assist in enforcing the statutes and even in suggesting modifications in the interests of the industry.

The principal fur-bearing animals of Manitoba are beaver, otter, muskrat, ermine, fisher, marten, mink, fox (red, cross, silver, white, black), wolf, skunk, lynx, wolverine and bear (black and polar). To a large extent their distribution is determined by climatic and geographical conditions. The white fox and the white or polar bear are found on the shores of Hudson Bay. The muskrat inhabit the swamps on the lower Saskatchewan River from Cumberland House to Lake Winnipeg, probably the greatest muskrat preserve on this continent. The periodic flooding of the Saskatchewan River replenishes from time to time the lakes and swamps of outlying flats and provides ideal conditions for this important fur producer.

Beaver, Marten, Fisher and Lynx

Beaver are sought particularly on the Churchill Basin and in the Oxford House territory in Northeastern Manitoba. Marten and fisher are numerous from Oxford to Island Lake, but are well distributed throughout Northern Manitoba generally. Marten are even trapped in the fringe of timber along the Hudson Bay coast. Mink are plentiful on the northern waterways. Otter are not numerous but may still be reckoned among the northern fur. Lynx, and to a lesser extent the fox, follow the periodic variations of the rabbit and suffer a serious diminution on an average every seven years. A periodical variation has also been noted in the case of the marten.

Wolves follow the Barren-land Caribou in their winter migrations, and are therefore most numerous north of the Churchill River. Their pelts are heavy and trapping is unprofitable at any great distance from the railway line. The wolverine or glutton is not infrequent and always unwelcome visitor to the traps in the whole territory, but particularly in the more northern sections.

Value of Catch Approximately \$2,000,000

It has been difficult in the past to estimate the value of the fur catch in the province for any one year. The statistics have been incomplete. With the more accurate system of checking now in vogue, fairly complete details will be available in the future. An estimate was made of the fur catch in that part of the province generally known as Northern Manitoba, which was added to the older province in 1912, for the year December 1st, 1918, to November 30th, 1919. The value of the catch was approximately \$1,875,000. This figure would represent at least two-thirds of the total catch of the province.

The area to which the traffic is reaching out is being gradually extended northwards, but the southern limit of the trapper's activity moves northwards with advancing colonization as well. It is probable therefore that the value of the catch given uniform prices maintains a fairly constant level.

The northern territory of the province of Manitoba, which played its part in the early history of the fur industry, remains to-day one of the great fur preserves of the continent. The province will see to it that with the impending industrial development in that, as yet, practically unpopulated area, every provision will be made for the protection and preservation of these so interesting and valuable creatures, the furry denizens of the woods.

Across Canada—Quebec

If a consensus of opinion were taken among visitors to Canada from other lands as to which city in Canada held for them the greatest interest, there is little doubt but that the ancient city of Quebec would receive the acclaim, and, indeed, judging by the thousands who each summer and winter throng its historic places and wend their way through its quaint and narrow streets, the capital of French Canada makes a fair bid for first place in popularity as a tourist centre on the American continent. For the tourist the city is concrete romance and concentrated history. Redolent of the old world, it has an atmosphere peculiarly its own, whilst an added touch of charm is the prevalence of the French tongue, which, with the nature of the surroundings, unconsciously transports the traveller to continental France.

The story of Canada centres peculiarly about the city of Quebec. Its site was originally an Indian village, and thus Cartier, on his voyage of exploration, discovered it in 1535. The real founder of the city-to-be, however, was Champlain, who sailed up the St. Lawrence in 1603 and again in 1608, at which latter date he founded the settlement which was later to blossom forth as the capital of French Canada. It was the scene of steady hostilities between the English and French for possession of Canada, and the capture of the city by Wolfe after the storming of the Heights of Abraham, signified the transfer of the rule of the great land from French to British government.

A Blending of Ancient and Modern

The impression might be created that Quebec is a city of the past slumbering in its memories and now merely an attraction for lovers of the quaint and historic. But this is far from the truth. There is another side to Quebec in which it successfully upholds its dignity as capital of the rich province of the same name, for it is a thriving port and bustling industrial centre. That Quebec is a city of modern growth and progression is evident from a perusal of its growing population. Whereas in the 1901 census its population was 68,840, by the time that of 1911 was taken it had jumped to 78,710, and the city census of 1920 returns it at 116,850.

Quebec is an important inland port, in Canada second only to Montreal. It is the summer terminal of many trans-Atlantic liners and the landing place of thousands of immigrants. Regular steamers run to Montreal, and Gaspé, Quebec; Charlottetown and Summerside, Prince Edward Island; Pictou, Nova Scotia; the Isle of Anticosti, and the Saguenay. The harbor is specially equipped with a fine elevator.

The city has touch with all parts of its province, as a capital should, by radiating lines of railway, whilst electric services conduct tourists to the renowned Montmorency Falls and the shrine of Ste. Anne de Beaupré. Twelve banks serve the city's financial interests, with thirty-four branches over its area. Educationally, Quebec is in an enviable position with a fine university and academic and secondary institutions of various orders.

Industrially, Quebec is the index to the thousand manufacturing activities of the province of which it is the capital, and the importance of industry to the city is shown to be progressing steadily and rapidly in a comparison of the figures of 1900 and 1918.

	1900	1918
No. of establishments..	255	424
Capital investment....	\$ 9,588,739	\$36,927,434
Employees.....	9,384	11,500
Salaries and wages....	\$ 3,103,578	\$ 6,979,516
Cost of raw material..	7,127,994	16,067,679
Value of products.....	12,779,546	38,265,277

Quebec has the largest corset factory in the Empire; there are twenty tanneries and thirty-three boot and shoe factories. Other important industries are woodworking, tobacco, biscuits, clothing, wooden and steel shipbuilding, iron and steel, railway shops, preserved and canned goods.

The capital of old French Canada, so picturesquely perched on the heights above the mighty St. Lawrence, is the place where the old and the new worlds meet, where romance slumbers and industry throbs. With countless attractions to the tourist and the student of history, it consistently grows in its industrial and commercial importance. There is only one Quebec, and though ever changing and expanding, it remains always the same.

Saskatchewan Town-planning

The necessity of having uniform regulations in regard to the opening of new townsites and other development work in the province of Saskatchewan was early realized, and the provincial parliament enacted legislation which provided that plans of any proposed new development work should first be submitted to the government and approval obtained before proceeding with it.

The operation of this new Act was put under the jurisdiction of the Department of Municipal Affairs, under whom a very successful and aggressive campaign along the lines as set forth in the Act has been carried on. In commenting upon the legislation, J. N. Bayne, Deputy-Minister of Municipal Affairs at that time, said: "In the minds of too many, town planning is not generally regarded as important. The impression that layouts of townsites in villages, towns and cities, and even of farms and farm land in the rural areas, are not vital, is erroneous. . . . By-laws and regulations for municipal institutions will be suggested for the purpose of enabling these self-governing bodies to ensure that townsites will be laid out on modern healthful lines rather than for the purpose of speedy sale and high profits for the vendor."

Organization of Commissions

Throughout the province, various towns and cities, notably Swift Current, Saskatoon and Regina, have organized town-planning commissions, building loan organizations and housing commissions, and the Department of Municipal Affairs is working in the closest harmony with these various organizations for the betterment of local conditions. In Regina, two housing schemes have been projected by large industrial concerns for the use of their employees, while in 1912 the city of Regina erected a large number of houses to provide shelter for families made destitute by the great cyclone of that year.

The Department receives a large number of development plans for approval every year, and

before approving of them careful study of the proposed scheme is made by competent engineers and surveyors, who are highly skilled in their line of work. If it meets with approval the Department then gives the applicant permission to proceed with the development of the project. By this means Saskatchewan land surveyors and engineers are kept in close contact with all new and proposed development work within the boundaries of the province and are in a position to co-operate with the government officials to the best interests of all concerned.

The first application for approval of a development plan was received on August 31st, 1919. Since that date and up to January 1, 1921, the Department of Municipal Affairs has dealt with the following classified summary: new townsites, 37 development plans; additions to hamlets, 25; additions to villages, 72; additions to towns, 10; additions to cities, 2; summer resorts, 2; total 148.

Sale or Transfer Regulations

The regulations for the subdivision of land into lots and blocks for the purpose of sale or transfer had, since 1908, been under a certain amount of control by the Land Titles office. In 1909, this was changed, and before any plan could be registered it had first to be endorsed with the approval of the Department of Municipal Affairs or the council of a city, town or village. In 1911, still further changes and additions to the regulations were made, instituting the requirements of a preliminary topographical plan showing contours, approval fees and the practice of inspection.

In 1911 and 1912, the number of plans submitted to the Department increased very rapidly. In twelve months, at this time, the total number of plans dealt with was four hundred and seventy-one, of which one hundred and seventeen were new townsites. The area commonly covered by a single plan is 160 acres, and in many cases 320 acres.

The trans-continental railways have been particularly active in the development of new townsites and the opening of new subdivisions, and under the Act have been responsible for 70 per cent of the new development plans submitted. The tendency of the railways is to adhere to a standard size townsite and street widths in all locations, and the simplicity of the rectangular street system makes for economy in surveying.

The Province of New Brunswick

By C. C. Hicks, B. S. A., Department of Agriculture, Fredericton, N. B.

New Brunswick, the largest of the three Maritime provinces, is a country of wonderful natural resources; great rivers, wide meadows, vast forests, rich mines. It is beautiful, healthful, resourceful and a land of promise for the worker

or capitalist who contributes to her development in manufacture or agriculture.

Here, within an area of 27,985 square miles fringed by a coastline of 600 miles, are 1,500 miles of main trunk roads, 1,600 miles of secondary trunk roads, 10,500 miles of ordinary by-roads, upwards of 4,000 bridges under the care of provincial engineers, and 2,000 miles of standard gauge railways.

These avenues of internal communication make the haunts of the deer, the moose and the speckled trout only a few hours' journey from any of the towns. Or the most remote forest area may be reached by tote team and canoe on the Tobique, Nepisiquit or Upsalquitch. A portage of two miles between Lakes Nictor and Nepisiquit allows the canoeist, outfitting at Andover or Plaster Rock for a fishing trip to the Tobique, to make a cast on the Upper Nepisiquit.

It is claimed that New Brunswick has more big game than any other province in Canada. The Chief Game Warden says in his report for 1920: "About twenty more American sportsmen hunted in our province this year than last, and from information at hand as in the past, these people returned home well satisfied and convinced that we have one of the best countries in America for big game. Of game killed, two of the moose heads had horns of 64 inches spread. The total number of moose killed in 1920 was 1,596 and the total number of deer killed, 2,844." The record spread taken in New Brunswick is 71½ inches. This moose was taken on October 10th, 1917, on the Nepisiquit River

Forestry and Mining

The forests of the province constitute the source of one of the chief industries, and from the government lands under timber license are derived the main source of revenue. The game also is under the purview of the government as well as the mines of coal, iron, gypsum, natural gas and oil. The amount of the revenue derived from the lumber cut of 1920, three hundred and sixty-five million feet, was \$1,257,967.17. The timber harvest comprises mainly the following species: spruce, fir, cedar, white pine, red pine, hemlock and hardwoods.

There are three branches of mining industry in active operation: coal mining in the Grand Lake region; the production of natural gas and oil near Moncton, and the quarrying and manufacture of gypsum at Hillsboro. The quantity of coal mined last year was 135,297 gross tons. The number of producing wells of gas or oil was eighteen. All gas at present used comes from the Stoney Creek field on Albert County side of the Petitcodiac River, eight miles below Moncton. One of the wells driven last year gushed 67 bbls. in one day. The total output of the gypsum

quarries was 37,796 tons, shipped mainly to the United States.

The province holds third rank among the provinces of Canada in the value of its fisheries. The smelt catch annually constitutes approximately two-thirds of the catch in all Canada, and its oyster fishery is famed in all American cities.

The port of St. John, the eastern water-gate and winter port of Canada and terminus of the Canadian Pacific and Canadian National Railways, is the distributing point for Eastern Canada, with rail connection to the entire continent. No other ocean port in Canada except Montreal has so good a record of industrial progress. Here are situated three grain elevators, three flour and feed mills, eight foundries and machine shops, four fish plants and fertilizer factories, a pulp mill and many other industries.

Growing Agricultural Output

The agricultural status of the province is most favorably known through the excellent quality and immense quantities of potatoes and hay which are shipped to United States cities. The area devoted to the production of these staples and grain approximates one and one-quarter million acres. At least five million bushels of potatoes, representing the average exportable surplus, are annually shipped to other provinces, United States and West Indian markets.

No country on the Atlantic coast possesses greater advantages in its adaptation for dairying—rich pastures, abundant supplies of water, cool nights and a large home-market that has never known an over supply, invites the farmer to take pride and a commensurate profit in high-producing dairies. Cheese and butter production, ice-cream and city milk supply absorb a large part of the dairyman's product. Centralized butter factories, of which there are now three established, exert a stabilizing effect on the industry and are favored alike by milk producers and consumers.

The total amount of cheese, butter and ice cream manufactured in 1920 in factories and creameries under government inspection was 1,107,900 lbs. of cheese, 1,064,563 lbs. of butter and 69,567 gallons of ice cream. Total value, \$1,065,685.52.

The province extends to the newcomer, whether he be tourist, worker or capitalist, the welcome and hospitality that is found "down east," and the advantages of her democratic institutions, excellent educational system, religious tolerance and every aid that can be secured through officials of the different departments of a settled and well-organized government.

Immigration in the Maritimes

The greater part of the immigration tide to Canada since this influx has assumed such importance as a factor in Dominion development has been deflected to the newer areas of the West to the neglect of the older Maritime provinces. The boundless area of the Western provinces with its atmosphere of vigor and energy would seem to instil a tireless virility and overwhelming confidence, and its inhabitants have never been slow in spreading broadcast the glad tidings of what awaits others who will settle there. Westerners are their own best immigration agents, and this desire for publicity and the realization of its value has been one of several factors which have contributed to building up the West to the partial neglect of the East.

The East is, however, awake to the advertising of its several and diverse attractions, and the efforts it has put forth quite recently are expected to bear fruit in the immediate future. Provincial authorities are sanguine of excellent results in the present year, and look forward to a substantial immigration, especially from the British Isles. The atmosphere and general conditions of living in the Eastern Provinces, with their smaller farms and cosy villages and hamlets, more closely approximate the rural districts of the British Isles than does the more bustling West where everything is performed on such a gigantic scale, and many persons coming from across the Atlantic in the past have passed by the provinces of Nova Scotia, New Brunswick and Prince Edward Island for a lack of knowledge of what these provinces offer them. There are opportunities equal to those in the West for people desirous of purchasing farms, for the farm helper and the household worker.

Settlement Increasing

In the past twenty years, or from July 1st, 1900, to March 31st, 1920, there entered Canada for the first time 3,428,824 persons, of whom only 157,912, or .043 per cent of the total, came to the Maritimes. In the seven months from May to November, 1920, the total immigration to the three provinces on the Atlantic coast was 4,436, a monthly average of 662.28, or .044 per cent of Canada's total immigration for that time. Of these people, 3,047 arrived by ocean ports and 1,389 from the United States, whilst the totals of the individual provinces were, Nova Scotia 2,905, New Brunswick 1,340, and Prince Edward Island 191.

Immigration in the Maritime provinces is naturally different to that of the prairie provinces and the hinterlands of Ontario and Quebec with their large open areas, and a selected policy is found necessary and carried out. Encouragement is more particularly given those who have a small capital and are physically fit, as well as the farm laborer and the household worker.

In Nova Scotia, the Bureau of Industries and Immigration, which is interested in the settling of vacant lands in the province, was instrumental in 1920 in bringing from across the water 276 agricultural helpers and farm purchasers, who brought with them capital to the extent of \$129,298. From inquiries it has received and other indications, the bureau anticipates a heavier year in 1921 and a greater influx to the farms of Nova Scotia.

Travelling Libraries

"A Library for Every Farm" might appropriately be adopted as the motto of the Agricultural Extension Service of the provinces of Alberta, Saskatchewan and Manitoba, which attempts to circulate the best in literature throughout the rural districts, and further education as well as foster greater interest in the social aspect of farm life.

Agricultural countries like Canada and the United States have always with them a subtle, half-exposed problem in the inherent tendency of the youth of the farm to be drawn to the bright lights and the allurements of the city. It is not that farm work is any longer the drudgery of the pioneers, for modern machinery has largely removed the arduous element from present day farming, whilst the man with a successfully operated farm is now often the envy of the business and professional man. But the natural drift of youth is to imagine that which he has not surpasses those things which surround his everyday life, and to the youth of the farm the city's attractions, its theatres, its crowds and bustle seem eminently desirable to live among. It is exactly the same attitude which makes the city-bred youth turn to the country fields and pastures and find such pleasure in the quiet and solitude of pastoral life.

And so men who have most clearly realized this drift and its causes, and seen the national danger it constitutes to a country whose foundation is the pursuit of agriculture, have devoted great energy to encouraging the youth to stay on the land, and have found the most effective remedy to be in furthering the pleasures of rural social life and bringing some of the things of the city to the country.

Novel Features of Social Life

In Canada, the government has taken a hand in this, and by introducing many novel features of social life, and offering facilities for others, plays an important part in bringing to the young men and maidens of the farm, a realization of the large future they hold to themselves and to the nation. Lecturers travel the provinces and deliver talks on a variety of subjects; school gardens are subsidized and encouraged; competitions for boys and girls are held in connection with all agricultural fairs;

farm literature on every possible subject is available for the asking. In every devisable manner the provincial governments show their appreciation of what the farm youth means to the country.

One of the keenest and most widely enjoyed pleasures of the country, especially in the winter season, is reading, for here there is oftenest the leisure and the desirable state for enjoyment. Books in rural districts take the place of many other and often less desirable and instructive means of enjoyment. Reading under the circumstances becomes study, for matter is well meditated and digested. Unfortunately, there is often one drawback, the availability of literature. Frequently a farmer is not in a position to collect a library of his own, and the city's facilities for borrowing books cannot be carried into the country districts. This question of supply, the provincial governments set out to solve.

The Operation of the System

Under the system as evolved by the Agricultural Extension Service of Alberta, Saskatchewan and Manitoba, a rural community has but to make an application and a compact folding case containing fifty volumes is sent to them. These books cover a wide variety of subjects with a substantial proportion of fiction. The books are circulated among the different farms, and when read are returned to the bureau whereupon a new library comes along.

This system of travelling libraries is doing a splendid work both in brightening social rural life, and in furthering the educational status of the farm population of these provinces. The best books only are to be found in these libraries, and careful plans are laid for the cultivation of desirable literary tastes. Whereas at first ninety per cent of the volumes are fiction, this proportion is gradually decreased, and the deficit made up of more valuable works of economic thought.

The Labor Situation

The labor situation during the month of April exhibited a further substantial decline in the cost of living, as illustrated in the cost of an average weekly family budget. According to returns received from about 5,000 firms, there was a slight improvement each week in the average volume of employment, but the net gains were smaller than the losses registered in the previous month. The time lost in industrial disputes was greater than in the preceding month, but less than in the corresponding month a year ago.

Fluctuations were noted in iron and steel during the month, resulting from the temporary shutting down of railway shops. These were re-opened towards the end of the month and the

period closed normally. Logging, in which a seasonal decline was expected, showed activity towards the end of the month due to river activity in Quebec and general operations in British Columbia. Due to the resumption of activity in sawmills, the lumber industries reported decided gains at the end of the month. The textile groups showed steady reductions, largely in Ontario and Quebec. Much the same situation prevailed in rubber products. Towards the end of the month the leather industry, particularly footwear, experienced a fairly substantial recovery, chiefly in Ontario and Quebec. The only notable movement in food products was the seasonal revival of fish packing and canning on the Atlantic and Pacific coasts. Another gain, of some importance, was in the tobacco industry, chiefly in Quebec. Railway transportation, construction and maintenance exhibited a general decline, many employees being laid off. Water transportation, on the other hand, increased its operations, shifting from the winter ports of the Maritimes to the St. Lawrence and Upper Lake ports. The mining situation varied according to districts. In Nova Scotia, the situation was unfavorable, whilst in Northern Ontario metaliferous mining commenced seasonal activity, and in the West the coal situation swung from a decline in the early part of the month to a slight advance during the last week.

The downward movement of prices was marked in hogs, butter, cheese, milk and eggs, and in materials, in leather, textiles, metals and building materials. In retail prices the average cost of a list of staple foods in sixty cities was \$12.74 for April as compared with \$13.23 for March, \$15.09 for April, 1920, \$13.35 for April, 1919, and \$7.51 for April, 1914.

Pacific Coast Whaling

Whaling on the Canadian Pacific coast, though it can only be said to be in the elementary stages of development and capable of large expansion, is rapidly and steadily growing into an important and profitable industry. The whaling season of 1920 was, from the point of catch, one of the most successful experienced for several years, in all some 430 whales being taken by Vancouver Island whalers. The year 1920 also saw considerable expansion in the industry of the manufacture of by-products and in innovations in the modes of utilization which will tend to greater future profit to the industry.

The whaling grounds of British Columbia are along the northern coast of the province and from thirty to forty miles out to sea. The principal species of whales caught are finback, set, sperm and sulphur-bottom, which run from twenty to ninety feet in length and weigh on the

average a ton to each foot. A whale weighing sixty tons, which is a fair average for estimation, will yield approximately six tons of oil, three and a half tons of body meat, three and a half tons of guano and three hundred pounds of whale bone. Every portion of the mammal is capable of utilization, a specimen of the size taken for estimation being worth, in aggregate revenue, nearly \$1,000.

In 1920, there were three whaling stations operating along the British Columbia coast with ten vessels actively engaged in prosecuting the hunt. The stations are located at Kyuquot Sound, and Rose Harbor on Vancouver Island, and at Naden Harbor, Queen Charlotte Islands.

Extension of the Industry

In 1920, the Vancouver Island Whaling Company was formed with a station at Barkley Sound, and operations are commencing this spring with four whaling vessels. A modern plant is being erected at Berkley Sound equipped with the latest labor-saving devices for the extraction of oil. The company is headed by experts in the whaling industry, and a number of returned soldiers will be given employment in the various phases of the company's activities. The operation, it is expected, will considerably add to the importance of the industry off the Pacific coast, increase the provincial catch and enlarge the revenue.

The oil extracted from the whale is the most profitable by-product, of which about 80,000 gallons, worth approximately \$100,000, were exported from the Dominion in 1920. The best of the meat of the whale is canned for human consumption, being fully as nutritive and appetizing as canned beef or mutton. More than 2,500 cwts. of this meat valued at nearly \$20,000 left the Dominion last year, going almost entirely to the United States, Fiji and Samoa. A campaign is necessary to educate people to the high quality and valuable properties of this canned product before an extensive market for it can be created. The residue of the blubber and meat are converted into guano and glue, the body bones are crushed and used for fertilizer, and the jaw bones utilized by corset and comb factories. A new feature was introduced into the industry in 1920 by cutting the meat into cubes of twelve to eighteen inches dimensions, freezing them and shipping them to Japan, where there exists a ready market.

The whaling industry on the Pacific coast shows every indication of extending to the proportions justified by the wideness of the field. The introduction of a new company, vastly increasing the scope of operations, alone would augur this. With the education of peoples to a use of whalemeat in diet, greater profit awaits the Canadian whaling industry.

Departmental Publications

Any of the following publications will be sent free on request.

Alberta, Saskatchewan and Manitoba.—A descriptive statistical booklet on the three prairie provinces with full information on the West.

The Park Lands of Central Alberta.—Descriptive of the area tributary to the Calgary and Edmonton line of the Canadian Pacific Railway in Alberta. History, description of soils, development, lands open for settlement, and information for settlers.

Irrigation Farming in Sunny Alberta.—Full description of Alberta's irrigated lands, their progress, production and possibilities.

Business and Industrial Opportunities in Western Canada.—Full listings of industries existing and business openings in the provinces of Western Ontario, Manitoba, Saskatchewan, Alberta and British Columbia.

Canadian Pacific Reserve Farm Lands in Lloydminster and Battleford Districts.—Information of Canadian Pacific lands in these districts, history, farming information, progress, and possibilities.

Canada's System of Government.—Canadian government briefly outlined to portray its democratic traits.

The Story of Canadian Nickel.—History of the nickel mining industry.

Canadian Oil Exploitation and Prospects.—An expert engineer's history of Canadian oil development and future possibilities.

Canadian Water Power Development.—Authoritative and exhaustive survey of water power reserves and possible development.

Paper Pulp from Flax Straw.—An investigation engineer shows the possibility of the development of a new industry in the West.

A Canadian Grain Handling Plant.—How Canadian grain is stored and shipped: Authoritative article on Canadian elevators.

Value of a Settler to Canadian Railroads.—Computation from reliable statistics of a farming settler's revenue-producing worth to Canadian railroads.

Bituminous Sands of the Athabasca Region.—Description with known values, and possibilities of development of the widely known tar sands of Northern Alberta.

The New Canadian Oil Field.—Dealing with the Arctic oil region of the new strike.

Water Powers of the Maritimes.—Authoritative article on the undeveloped power systems of the Eastern provinces.

Water Powers of Manitoba.—The water powers of this province dealt with exhaustively.

Oleomargarine.—History of oleomargarine in Canada and its future prospects.

Synopses of Natural Resources.—Forty-five pamphlets dealing briefly but concisely with Kaolin or China Clay, Oil Shales, Mica, Fluor-spar, Asbestos, Molybdenum, Magnesite, Fruit, Flax Fibre, Nickel, Coal, Clays, Salt, Copper, Zinc, Silver, Gold, Pyrites, Iron, Potash, Talc, Feldspar, Platinum, Phosphate (apatite), Manganese, Graphite, Cement, Barytes, Gypsum, Irrigation, Petroleum and Natural Gas, Corundum, Sulphates of Sodium and Magnesium, Timber and Pulpwood, Fish, Fur, Peat, Grazing Lands, Mineral Waters, Building and Ornamental Stone, Whaling, Sealing, Wheat, Oats and Barley, and Water Powers.

The Department of Colonization and Development

The Department of Colonization and Development has the following offices established in the United States, Great Britain and Europe, whose representatives, at any time, will be glad to furnish information regarding Canadian agricultural, industrial and commercial enterprises.

MONTREAL, P.Q.	E. G. WHITE, Supt., 335 Windsor St. Station.
WINNIPEG, Man.	J. F. SWEETING, Industrial Agent, Canadian Pacific Railway.
CALGARY, Alta.	M. E. THORNTON, Supt. U.S. Agencies, Ninth Ave. and First St. East.
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or any agent of the Canadian Pacific Railway Company or Canadian Pacific Ocean Services, in United States, Great Britain, or Europe.

J. S. DENNIS, CHIEF COMMISSIONER,
Department of Colonization and Development,
Canadian Pacific Railway Company.

Ask the Canadian Pacific about Canada



Agricultural and Industrial Progress in Canada

A monthly review of Agricultural and Industrial progress in Canada, published by the Department of Colonization and Development of the Canadian Pacific Railway at Montreal, Canada.

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MONTREAL

July, 1921

Canada's Birthday

ON July 1st, Dominion Day, Canada attained the age of fifty-four years, born of the confederation of the provinces into a united Dominion in 1867. As the age of nations is reckoned, she is extremely young, the merest infant in comparison with those countries of older continents whose national origins are lost in the mists of antiquity and which have struggled to mature stature with the fulness of time. But Canada is a precocious child, of sturdy proportions and husky growth, with all the promise of a splendid, vigorous manhood awaiting it.

With the recurrence each year of its natal day, it is natural to look back and measure the progress of the Dominion over the past twelve months. Invariably is it a retrospect of gratification and satisfaction. Always is it found that the body of the giant stripling has grown a little fuller and the limbs a little stronger as progress is maintained, with carefully measured strides, towards that maturity which is national fulness.

Fifty-four years is a considerable span in the lifetime of a human being; in the existence of nations it is a mere iota. Yet in this brief period a comparison of Canada as she exists to-day with the hesitant step and the uncertain status she possessed in 1867, shows that the years in between have been replete with event and achievement. Canada has emerged from a weakling, a dependant colony, to stand firmly upon her own feet and to take her place, in perfect equality, with the nations of the world.

When a Confederated Canada was first brought about it had a population of a little over three million people; it is anticipated that the census of the present year will return record of nine million inhabitants. Immigration has been the most potent factor in Canada's growth. Its rate per annum in 1867 was not fifteen thousand; last year, it was nearly one hundred and fifty thousand, and this year will unquestionably be greater, as the Dominion emerges a year further out of the economic maelstrom in which the war precipitated her.

Public revenue in 1867 amounted to \$19,335,561. Last year wealth flowed into the coffers of the Dominion to the extent of \$451,336,029. Trade has increased in a wonderful way as an increasing population has enhanced production and the demand for imports. At the time of Confederation, imports were \$67,090,159; last year, they had reached \$1,064 millions. Exports have jumped from \$52,701,720 to \$1,287,000,000 in the same period. Industrially,

the extent of the expansion is difficult for the mind to grasp. Whereas at the time of the union of the provinces the amount of money invested in the country in manufacture was less than \$78,000,000, it is now more than \$3,000,000,000. As further indications of prosperous growth banks have increased their branches from 123 to 4,500, and railway mileage has grown from 2,288 miles to 38,896 miles in the same space of time.

Agriculturally, the development has been phenomenal, and where skeptics said no wheat could be grown, crops were raised which astounded the world. From an insignificant

CANADA'S PROGRESS SINCE CONFEDERATION

1867	Age 54 Years	1920
3,000,000	Population	9,000,000
14,666	Immigration	147,502
2,288	Miles of Railways	38,896
123	Branches of Banks	4,500
	Farms under Cultivation	800,000
	Acreage under Cultivation	53,050,000
3,800,000	Cattle, Horses and Swine	15,517,000
\$78,000,000	Invested in Manufactures	\$3,034,301,000
\$19,336,000	Public Revenue	\$451,336,000
\$52,701,000	Exports	\$1,287,000,000
\$67,090,000	Imports	\$1,064,000,000

Agricultural & Industrial Progress in Canada

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Norman S. Rankin, *Editor of Publications.*
E. L. Chicanot, *Asst. Editor.*

amount of land under cultivation in 1867, Canada's farms total well over eight hundred thousand with more than fifty-three million acres under cultivation. In the fifty-four years which have elapsed, horses have increased in numbers from eight hundred thousand to more than three millions; cattle from two millions to nine. Both have won the highest international honors and their progeny have been in demand the world over to raise the standard of stock of other countries.

There can be no vestige of doubt as to what the next half-century holds for the Dominion. Her inevitable growth and national prosperity are reflected in her history since Confederation. The tide of the land-hungry from older countries, over-peopled, is ceaseless, and, whilst maintaining a gratifyingly high standard, steadily increases in the intensity of its flow. Hosts are attracted by the almost illimitable natural wealth with which nature has favored the land. She has all the qualities for healthy, intelligent growth. Sanely, surely, with Titanic strides, carefully measured, Canada progresses on her way to manhood's estate, virile and strong.

General Agricultural Situation

*By J. Dougall, General Agricultural Agent,
C.P.R., Montreal*

The agricultural situation throughout the Dominion at the end of June is all that could be hoped for. Ample moisture has fallen and condition of seed bed is reported as excellent. The three prairie provinces are particularly fortunate in this respect, and while there have been a few local losses from high winds, nothing of importance has developed. The eastern provinces suffered to a slight extent from lack of moisture earlier in the season, but this was offset by an abundance of rain during June.

Below is a preliminary estimate of the acreage sown to grain, hay and potato crops for the Dominion for the year 1921:

British Columbia.—All sections of the province report grain and fodder crops in excellent condition. Advices indicate increased acreages in wheat, oats, and rye, with a slight decrease in potatoes. Strawberry season has commenced with indications of a heavy yield. Some light frosts reported in the Vernon and Okanagan districts affecting early potatoes, tomatoes and cherries; no damage to apples and pears. The apple yield this year will about equal last year's harvest of 500,000 barrels.

Alberta.—Crop situation particularly favorable; grain being well advanced for this time of year. All grain crops sown, with exception of about thirty per cent. of green oats. Acreage for this province is as follows: Wheat 4,889,380; oats, 2,317,275; barley, 624,809. A decrease in oats this year as compared with last year, due to the low price obtainable.

Saskatchewan.—Conditions in this province are better than they have been for years. Generous rains have resulted in rapid growth. Some reports of grasshoppers. Estimated wheat acreage, 10,433,500; oats, 4,749,000; barley, 514,000.

Manitoba.—Conditions all over the province are reported as excellent. Weather warm and grains making rapid growth. Some grasshoppers but no damage. Acreage sown to wheat, 2,679,000; oats, 1,855,000; barley, 806,600.

Ontario.—General conditions throughout the province are all that could be desired. Weather conditions favorable and moisture sufficient. Acreage sown to wheat, 877,300; oats, 2,938,000; barley, 460,000; potatoes, 140,000. Estimates show that there will be a slight increase in hay and clover acreage. Reports indicate good condition of the apple crop in this province, which, as a whole, should equal that of 1920. The strawberry crop is earlier than usual; picking now on and a heavy yield is expected.

Quebec.—This province suffered from lack of rain during the early part of the season, but towards the end of June copious rains alleviated the situation and at time of writing all points report favorable conditions. Acreage sown to wheat, 215,400; oats, 2,294,000; barley, 190,700; potatoes, 298,300. The apple prospects are better than for years past. Trees came through the winter in excellent shape. Fameuse, McIntosh, and Wealthy varieties would appear to exceed last year's yield by 50% or more.

New Brunswick.—Conditions throughout the province are very favorable. Rains have been very plentiful during the month, and all districts report crop conditions satisfactory. Acreage sown to wheat, 26,000; oats, 218,000; barley, 8,100; potatoes, 70,500.

Nova Scotia.—Conditions all over the province are reported as excellent with abundance of moisture. Acreage sown to wheat, 25,100; oats, 156,000; barley, 11,000; potatoes, 46,100. The apple crop in Annapolis Valley is reported to be in excellent condition, and estimates place the crop in excess of 1920.

Prince Edward Island.—Conditions on the Island are reported very favorable. Acreage sown to wheat, 35,000; oats, 183,500; barley, 5,000; potatoes, 31,300.

Livestock Situation.—Conditions are excellent all over the Dominion, but raisers are anxious as to market. Continued shrinkage of values is reported. Several thousand cattle on foot have been shipped to Great Britain.

Dairy Products.—Prices have been somewhat steadier during the month, but producers expecting further declines. Export demand is light.

Experimental Farms

Agriculture is the first industry of the Dominion and likely to remain so, and recognising its importance as such, no pains nor efforts are spared in developing and promoting it by every means possible. The Government of Canada and many influential organizations unceasingly are exerting every effort to induce colonization and people the nearly one hundred million acres of fertile unoccupied arable land

Agricultural and Industrial Progress in Canada

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in the Prairie Provinces as well as the undeveloped lands of Eastern Canada and the Maritimes. But their zeal does not end with getting immigrant peoples settled on the land. It is the country's aim to make each a successful agriculturalist both to his own profit and that of the Dominion, to this end maintaining the supremacy of Canadian agriculture.

One of the principal and most successful means in accomplishing this is the experimental farm. Canada has established and developed an excellent system of experimental farms which cover the country and adequately serve, with their branches, every settled portion of the country. The central experimental farm, which is headquarters for the Dominion, is located at Ottawa, whilst branches and auxiliary farms and stations are to be found in every province. There is one farm in each of the provinces of Prince Edward Island, New Brunswick, and Ontario, two in Nova Scotia, four in Quebec, two in Manitoba, three in Saskatchewan, two in Alberta, and four in British Columbia. There are also two sub-stations in Alberta, two in the Yukon, and one in British Columbia. An addition to the system is the tobacco stations at Farnham, Quebec, and Harrow, Ontario.

Research and Assistance

At all these farms, experimentation and research are carried out on every phase of agriculture, and advice and assistance tendered on every aspect of farm life. Their operations have proved of immeasurable benefit in ascertaining the adaptability of certain sections to specific crops, originating plant life, proving the crop values of newly settled areas, and extending information on every point in farm life. They are at the continuous service of the Canadian farmer who is confronted with some problem in his daily round or who is in doubt as to how to proceed with some operation.

At the central experimental farm at Ottawa, thousands of inquiries are received yearly on subjects covering a very wide range. Advice is given on economy in purchasing feed, on the purchase of livestock, on labor-saving devices in farm work, and in one year more than seven hundred sets of blue prints with specifications for farm homes and buildings were distributed. The Horticultural Branch in its various spheres of activity has been responsible for originating new varieties of apple, plum and strawberry, and has given genesis to new varieties and species of flowers.

The Poultry Branch operates poultry plants at all the farms throughout the country and is interested, among other things, in providing for the farmers the best laying strains. Disease investigation work is carried on, and through the branch's extension work, exhibitions are held, assistance and advice given to poultrymen, laying contests instituted, and lectures, judging,

and demonstrating conducted at fairs. An active Bee division has done much for the apiarist in Canada in experimentation upon the reduction of labor and production of honey. Canada's tobacco industry in its every phase is the care of the Tobacco Division, whilst the Division of Economic Fibre Production is continually making tests of new crops and has achieved some fine results, notably in flax fibre.

The Division of Chemistry

The Division of Chemistry receives all agricultural produce for analysis, and more than seven thousand samples have been received in one year. These include seed, flour, feeds, meats, etc. The Botany Division is interested in the extermination of insectivorous pests, diseases in grain, etc. The Cereal Division tests cereals for the best conditions of growth and also distributes free samples of seed to farmers, and conducts baking and milling tests of field products. The Forage Plants Division is concerned with the supervision of tubers throughout the Dominion and the ensurance of an adequacy of seed.

The results of experimentation, the reports of researches and concrete information for the farmer, is disseminated by the Exhibits and Publicity branch. Exhibits are held all over Canada at provincial and local fairs, lectures are given on a wide variety of subjects, and an extensive distribution of literature is made.

The farmer in Canada is recognized as the most valuable asset the country possesses. He is at the basis of the nation's wealth and progress; he is the hinge upon which swings national development. To make better farmers and promote agriculture generally is recognized as a prime factor in Dominion expansion, and to effect this warrants the nation's utmost endeavors. Canada has already surprised the world with both the quality and quantity of her agricultural products, and this in some little measure is due to the system of experimental farms at all times at the farmer's service.

Success in Mixed Farming

In certain sections of the Canadian West, there still exist large ranches with wide sweeping vistas of prairie range thickly dotted with browsing cattle. In other areas, waving grain fields stretch from the observer to the horizon, with scarcely an animal to be seen as far as the eye can reach. But there is an infinitely greater number of localities where these two agricultural systems combine on a lesser scale to make for greater farming security, where the farmer, besides his land under cultivation, has his herd of dairy or beef cattle and other side lines of agriculture which combine to make a sure and healthy annual farm revenue.

John W. Lucas, of Cayley, Alberta, the grand champion winner for oats and other prizes

at the Chicago International Exposition this year, and a regular winner at international exhibitions for several years, stands out not only as an example of the city boy who made good as a farmer, but also as exemplifying that class of western agriculturalists who, believing in the precaution and safeguard of distributing their eggs, have sought and found prosperity along the line of mixed farming.

Mr. Lucas is not a large farmer as farmers go in Western Canada. He has never been a large farmer. His success does not lie in the fact that he did things on a big scale but that he worked carefully and intensively, believing in doing a little well rather than a great deal in a slipshod manner. It is his conviction, backed up by years of successes, that pedigreed stock and selected grain are cheap in the light of the value of progeny and production.

Perseverance and Application

Mr. Lucas was a town-bred boy of Stratford, Ontario, and at the age of eighteen all he knew about the farm had been gleaned from a few occasional visits to the country as holidays. But when he had reached these years it became his desire and ambition to own land of his own, and he had the conviction that the utmost contentment and ultimate prosperity to be derived from honest human efforts lay in that direction. His material assets were nil, and for a man in this position, the farm lands of Eastern Canada were out of reach and hope for some years. He did the logical thing. He went to Western Canada and took a government homestead of one hundred and sixty acres. That was in 1903, and he is still living on that homestead. True, he has added to his holdings by acquiring adjacent farms, but he has never undertaken more than he can conveniently handle in a thorough and efficient manner, and the 1,000 acres he now farms is excellent from every agricultural viewpoint. He has followed exacting, intelligent farming from the first, tilling good clean land in methods to preserve its fertile state, and exercising the same judgment in building up his cattle herd. His agricultural library is an extensive one, and any reading matter, government pamphlet or otherwise, likely to aid in the production of better grain or livestock, has its place there.

From the first, when he commenced to exhibit the products of his farm, his success was gratifying, and for five consecutive years he carried off the first prize for white oats at the Alberta annual seed fair. Going farther afield, he exhibited at the International Soil Products Exhibition at El Paso, Texas, in 1916, and was awarded the sweepstakes for oats, and the second prize for barley in the open classes as well as the dry farming sections. Again, at Peoria, Illinois, in 1917, he won third prize for white oats, barley, and field peas in the open

classes, and second for oats, first for rye, and first for brome grass in the dry farming section. This year the pinnacle of success was achieved with the grand championship for oats at Chicago.

This, in brief, is the record of a mixed farming success. The fact that a commencement was made in ignorance of farming and lacking capital, did not count against the assiduity, faith, and systematic efforts put forth. It exemplifies the work of that large section of westerners moving in the same direction, who believe mixed farming is the surest road to agricultural prosperity and the basis of success on the land.

Ascending Agricultural Wealth

Agriculture ranks first and foremost among Canada's industries, and by means of its progressive strides successfully maintains its place at the head of the list in spite of the rapid progress made each year in manufacturing and other Canadian activities. The total estimated agricultural wealth of the Dominion in 1920, according to the *Monthly Bulletin of Agricultural Statistics*, amounted to \$7,612,151,000 exclusive of miscellaneous products such as tobacco, flax, fibre, and maple products which would add another \$23,000,000 to this total.

Agricultural production for the year 1920 is estimated at \$1,946,648,000, made up of field crops, \$1,455,244,000; farm animals, \$140,083,000; wool, \$5,321,000; dairy products, \$256,000,000; fruits and vegetables, \$40,000,000, and poultry and eggs, \$50,000,000. To arrive at the estimated agricultural wealth, \$4,232,588,000 is added for land and buildings, \$391,669,000 for farm implements, and \$1,041,246,000 for farm live stock.

The estimated agricultural wealth of the previous year, 1919, was \$7,379,299,000, showing an increase in value for the past year of \$232,852,000. An increase in production value accounts for part of this, significant of a remarkable increase in yield when the decline in prices of farm commodities is taken into consideration. The steady and continual rise of farm land with the improvements in the way of buildings thereon had the effect of nearly doubling this item of the estimate. Whilst the value of the country's possession of farming implements increased considerably there was a decline in the value of live stock, though no perceptible dwindling in numbers for the main part.

Many Factors Contribute

The ascending value of agricultural production in Canada is very clearly illustrated in a comparison of the values of the past six years. In 1915, the total production was valued at \$1,118,694,000; in 1916, at \$1,223,952,000; in 1917, at \$1,621,028,000; in 1918, at \$1,905,373,000; in 1919, at \$1,975,841,000; and in 1920,

at \$1,946,648,000. Between the years 1915 and 1920, field crops increased in value from \$825,371,000 to \$1,455,244,000; farm animals from \$79,958,000 to \$140,083,000; wool from \$3,360,000 to \$5,321,000; dairy products from \$146,005,000 to \$256,000,000; fruits and vegetables from \$35,000,000 to \$40,000,000 and poultry and eggs from \$35,000,000 to \$50,000,000.

Many factors are contributing to the aggrandizement of Canadian agricultural wealth. Each year sees a substantially increased acreage and production due to continuous settlement, which in its turn effects an elevation in Canadian farm land values.

High Standard of Agricultural Production

Previous articles in this publication have dealt with Canada's international victories in carrying off the premier awards for the production of quality wheat on the American continent consistently for the past ten years, as well as the greater number of the honors for oats and barley. The contention in these collated facts is that Canada produces cereals which are second to none the world over, and in the face of the evidence there is no gainsaying this.

Whilst Canada comes into open competition with the world in the quality of her agricultural produce of all kinds, and can grow on her fertile farms crops of the highest grade, she is unable as yet to enter into comparison in the matter of total production. A vast portion of her rich agricultural land, amounting to many millions of acres, and forming potentially one of the world's great farming areas, is undeveloped and awaits settlement and the plough before producing to capacity in the manner that has made the quality of Dominion crops famous.

Canada can, however, come into active competition with other countries largely agricultural, the United States for example, with respect to the fertility of her land, its growing qualities and those of the Canadian climate and farming season. Compared as to average production, she makes a very fine showing. A comparison between Canadian and United States production for the past three years shows that Canada has maintained a high standard in all the crops she cultivates, and has in the majority of cases exceeded the average achieved by the older producing country.

The Centre of Wheat Production

It is not so long ago since agriculturalists scoffed at the idea that it would be possible to grow wheat profitably in Canada. Canadian farmers answered this by taking most of the premier honors for this crop at international exhibitions. Not only that, but it is apparent that the Dominion preserves a higher average production throughout the country in both spring and winter varieties than the United States, taken as a whole. In the year 1920, when the production of spring and winter wheat in the United States was 10.8 and 15.3 bushels per acre respectively, Canada secured an average of 14 and 24 bushels. In the previous year, 1919, with a United States production of 8.8 and 14.9 bushels, Canada's average yields per acre were 9.50 and 23.75. To go back another year, they compared 16.2 and 15.2 as against 10.75 and 19.00, the United States obtaining a greater average yield of spring wheat in that season.

A comparison of the respective yields of the past three years in oats indicates that Canada, although she secured most of the international honors for the quality of her product, has fallen slightly behind the United States in average production per acre. Whereas in 1920 her average production was 33.50 bushels per acre, that of

the United States was 35 bushels. In the previous year, when she produced 26.25 bushels, farmers across the line managed to achieve 29.4 bushels. In the year 1918 the yields stood at 34.7 and 28.75 with the United States in the ascendancy. The same slight difference is recorded in barley, the average yields being 25.6 and 24.75; 22.4 and 21.75; 26.3 and 24.50.

But when we pass on to other agricultural production, the comparisons read differently, and, with few exceptions, Canadian farms are found to out-yield those of the United States. In rye for instance, when the average yields per acre over the United States during the years 1920, 1919 and 1918 were respectively 13.7, 12.5 and 14.2, Canada obtained harvests which brought her averages up to 17.50, 13.50 and 15.25.

Buckwheat, Flax, Hay, etc.

Buckwheat is not raised extensively in Canada outside of the Maritime provinces. Nevertheless, judging by the last three years' respective productions, Canada can grow this crop more profitably than farmers across the international boundary. In 1920 Canadian farms secured an average production per acre of 23.75 bushels, whilst United States farmers reached a yield of only 18.9 bushels. In 1919 Canada's average yield was 23.50 bushels against that of 20.6 across the line. Again, in 1918 a comparison is found to be in Canada's favor with 20.75 bushels against 16.5 bushels.

In the production of flaxseed in 1920, the United States grew an average of 6.2 bushels to the acre as against Canada's 5.60, but in the year 1919 Canada had the slight advantage of 5.00 against 4.9. There would appear to be no doubt left as to the greater suitability of Canadian land to potato production after a survey of the comparative figures of production. Against the United States average of 109.6 bushels to the acre last year, Canada produced 170.50. Her yield in 1919 was 153.50 against the 90 bushels reached across the line. When the United States produced 95.9 bushels in 1918, Canada achieved 142 bushels.

Slight divergencies only are observed in the hay yields of the two countries, both in the tame and wild varieties. Taking the average of all the hay produced, the United States secured a slightly higher production in 1920 when the yield per acre was 1.34 ton against Canada's 1.30 ton. The advantage is substantially Canada's in the two previous years, however, with averages of 1.55 and 1.40 against 1.36 and 1.15.

The Soothing Weed

Tobacco is not among the crops of first importance in the Dominion, only about 50,000,000 pounds being raised at the present time, but to judge by the yields obtained in a comparison with the United States, which has such an immense tobacco crop, there is ample justification for the intense interest which is being evinced in extending the industry. Against the United States tobacco yield of 1920 of 796.1 pounds to the acre, Canada secured 1,062 pounds per acre. The advantage to Canada in 1919 was even greater with a production of 1,069 pounds per acre against that of 761.3 across the line. The year 1918 was a good one for the tobacco crop of the United States and a poor one for Canada, but nevertheless the Dominion maintained her superiority with a yield of 905 pounds per acre against 873.7 pounds.

This comparative survey should be broad enough and cover a sufficiently extensive period to form an accurate estimate of Canada's merits as an agriculturally producing country. Canada has not only produced the finest crops of cereals in the world as adduced in the open competitions with the first farmers of the continent, but maintains, for the greater part, a superiority in the average yield of the crops she produces. Only wanting is the further growth of settlement upon her fertile tracts, bringing other millions of acres to the same fruitful standard, to give the Dominion the lead of the world in aggregate production.

lions; Lachine and Quebec in Quebec; Welland, Galt, Peterborough, Brantford, Kitchener, London and Ottawa, in Ontario; and Calgary in Alberta. Seven centres, Sherbrooke, Hull, Halifax, Fort William, Port Arthur, Oshawa, and Ford, have industries in which capital between ten and twenty millions is invested. The remainder of the forty-four centres have an industrial investment between five and ten million dollars.

Both Montreal and Toronto have an annual industrial production of more than five hundred million dollars. Hamilton and Winnipeg have productions of over a hundred millions. Vancouver and Sydney exceed fifty million dollars in their output. Seventeen cities exceed twenty millions and are under fifty millions in production. Only four of the remaining cities cited are under the ten million dollar figure in their annual industrial output.

Industrial Outlook in Western Canada

*By J. F. Sweeting, Industrial Agent, C.P.R.,
Winnipeg, Man.*

The West is still without incentive to spend money on any large projects. Business continues to be quiet, but is showing improvement when compared with the earlier months of this year and suffers little in contrast with that of the year 1919.

In British Columbia, the outlook for the season's fruit industry is first class, with the berry crop showing an increase in tonnage over 1920. Apples and other tree fruits give promise of a good harvest with quite fair prices all round. The lumber business is picking up, most mills showing greater activity with promise of good fall conditions. Mining is still quiet, looking for improvement in the metal market before any great change can take place in the present situation. In the meantime, prospecting work is being carried on in various parts of the province and a shipment of iron ore is being sent to Great Britain for electrical smelting test. The British Columbia Government is undertaking to drill three wells for oil in the British Columbia area of the Peace River country near Hudson's Hope, in order to complete the two-year survey work that has already been carried out in that territory. A new pulp mill is to be constructed at Seal Cove near Prince Rupert, and some other small industries are in course of development.

In Alberta, great activity is being shown in the erection of oil drilling outfits and sinking of new wells. The work to be done this year gives promise of definite results. Recent oil seepages discovered between the Sheep and Highwood Rivers south of Calgary have stimulated interest in this district and a test well is to be put down. Agricultural conditions in the province are better

than for some years past. There is an increase in wheat acreage, seeded-moisture conditions have been good all through the spring, and there is every evidence of a good crop. Factories have been working full time, and while wholesale and retail trading is not as active as desired, business is in good shape with promises of steady increase. The bonds of the Lethbridge Northern Irrigation project have been sold and work will be commenced.

Crop Condition Excellent

Saskatchewan is well satisfied with present crop outlook. Seeding conditions were good, and plenty of moisture has fallen. There is not much building activity or construction work of any kind proceeding at the time of writing these notes. Wholesale and retail trading is dull, but the outlook is for improved conditions, which should develop around the beginning of July. A considerable number of new settlers are going into the Battleford and Lloydminster districts in the north as well as to other parts of the province.

Manitoba seeding was carried out under good climatic conditions and the crop is now well above the ground with very promising outlook for heavy harvest. Trading conditions are improving all along the line, and while construction activities are not large, yet the May building permits for Winnipeg exceeded one million dollars, with similar amounts in sight for each of the summer months. In addition, Brandon has half a million dollars of construction work for June, so that this industry will by no means be at a standstill. The pulp and timber limit of over 700 square miles east of Lake Winnipeg for which tenders were called by the Dominion Government has been granted to the J. D. McArthur Co., and under its term a pulp and paper mill must be erected in Manitoba within a period of three years. The general impression is for continuous improvement.

Undoubtedly quiet times have had a steady-ing effect, with the result that the basis of business activities is on a better foundation than has been the case for many years past. A good crop put in as it has been at a low cost, will place the west in a position to carry on active operations, and I look with confidence to the enjoyment of excellent business conditions in the near future.

Canadian Fur Industry and Markets

The census of raw furs for the season 1919-1920, conducted by the Dominion Bureau of Statistics, shows the total value of pelts of fur-bearing animals taken in Canada during that season to be \$21,197,372. To this total Ontario contributed \$6,414,917; Quebec, \$4,587,110; Manitoba, \$3,130,627; Saskatchewan, \$2,338,761; Alberta, \$1,550,009; Northwest Territories, \$1,118,972; British Columbia, \$742,242; Prince

Edward Island, \$660,704; Nova Scotia, \$287,990; New Brunswick, \$225,871; and the Yukon Territory, \$140,169.

Muskrat led as the principal item of revenue with \$5,966,762, being only slightly in advance of beaver with a value of \$5,336,067. Marten returned \$1,787,940, and mink over the million mark with \$1,697,561. Silver fox accounted for \$932,602; fisher, \$859,178; and then in order of importance, coyote, white fox, red fox, ermine, skunk, otter, lynx, patch fox, raccoon, timber wolf and black bear.

The most significant feature of the fur industry in the course of the past year has been in that of fur marketing, a phase previously seriously neglected and attended with a corresponding commercial loss of some magnitude. All indications point to Canada's ascension in the marketing of furs to that place which her prominence as a producer, both as to quality and quantity, justifies. The initial effort in this endeavor, which was attended with the most gratifying success, was made in the spring of 1920, when the first Canadian fur sale was held at Montreal and more than five million dollars worth of raw skins were disposed of. Buyers were attracted from the United States and the British Isles, France, Russia and Japan, and furs for disposal came from as wide an area including distant Australia. The second sale, this spring, under conditions in which fur prices had suffered a considerable slump, brought in more than two million dollars and evoked the same international interest and response.

Winnipeg Establishes Annual Sale

Encouraged by Montreal's success, a bid for the same prominence has been made by the City of Winnipeg, the gateway of the west, alike to its great fur producing areas as to its fertile grain fields. The northern areas of the four western provinces together with the Northwest Territories constitute a rich hunting and trapping field, accounting for about ten million dollars worth of furs annually. Winnipeg, with its commercial importance and facilities of access, is a handy point of accumulation and storage and logical point for sales.

The success which attended the first Winnipeg sale, with the co-operation of vendors and buyers, is considered to have already firmly established the city as a fur marketing centre, to maintain and protect, with Montreal in the east, Canadian sales of Canadian produced furs. Interest in the future of the city in this respect was evidenced in the attendance at the sale which, in addition to Winnipeg and Montreal dealers, included buyers from New York, Chicago, St. Louis and the states of Minnesota, Indiana and others.

There is no doubt but that as the world's first fur producer, both as to the number and richness

of the pelts, Canada can attract fur buyers from the entire globe, and should therefore maintain her own markets and reserve her sale for the Dominion's benefits. That she can do this successfully, and will attain greater heights in this regard, would seem to be indicated in the successes of the Montreal and Winnipeg ventures.

Across Canada—Regina

Regina, the capital of the province of Saskatchewan, is a stripling among Canadian cities which has risen to its present agricultural and industrial importance with the development of the new west and the Prairie Provinces. Situated on the main line of the Canadian Pacific Railway, about midway between Winnipeg and the Rocky Mountains, it has become the principal centre of the middle west with all that this implies. Recent as is western Canadian history, Regina figures in many of its romantic pages, and as the capital of the old Northwest Territories, featured prominently in the Riel rebellion and other Indian disturbances. When the province of Saskatchewan was created in 1905, in the subdivision of the former Northwest Territories, Regina as the leading centre became its capital. Its remarkable progress is illustrated in its increase of population from 2,249 in 1901 to 40,000 in 1919.

As a prairie city settled on a treeless plain of tremendous expanse, it belies its description, but to the full sustains all the regal qualities its name implies—the Queen City of the prairie. Parks of remarkable beauty with a profusion of verdure are to be found within its confines, and the clean orderly streets are lined with a density of shade trees. It has a collection of fine public buildings, prominent among them being the parliament buildings of the Saskatchewan legislature, and is a comfortable residential city of beautiful homes.

Centre of Rich Agricultural Area

Regina is the centre of a rich and expansive agricultural territory which it adequately serves by twelve railway lines radiating from it. The many needs of the towns, villages and rural centres of this wide area are distributed from Regina, and agricultural implements alone sent out each year amount in value to more than \$5,000,000. It has several colleges and academies and fine high and public schools. From the organization of the Royal North West Mounted Police it has been the headquarters of that force, and since their amalgamation with the Dominion Police, under the name of Royal Canadian Mounted Police, it still remains the training ground for recruits.

Naturally, Regina is important industrially, being the most active manufacturing and distributing centre between Winnipeg and Calgary,

and in this respect is making great strides every year. The 1918 census gives the city a total of 117 industrial and manufacturing establishments with a total capitalization of \$9,490,593. These give employment to 1,578 persons drawing \$1,863,494 in salaries and wages. The amount these plants absorbed in raw materials in 1918 was to the value of \$4,740,395 and their output that year \$9,737,737. Included in these industries are flour mills, sash and door, foundries, machine shops, soap, cement blocks, pressed bricks, elevators, wire and steel works, tanning, aerated waters, mattresses and cigars. There are two \$500,000 departmental mail order houses, an abattoir, and a \$2,000,000 oil refinery.

The future of the city of Regina is no matter for conjecture but, in common with other embryo cities of the prairie west, is as assured as if an accomplished fact. The phenomenal growth of the past decade is a mere reflection of the progress of the next. In the mammoth strides the western provinces are taking in their rise to world prominence as a producing territory of agricultural commodities the future of their centres is assured. And one of these is Regina, the capital and Queen City of Saskatchewan.

Taxation in Western Canada

By F. J. Cowdery, Calgary, Alberta.

In these after-the-war days, when every country is endeavouring to recuperate after the terrific drains upon its financial resources, and to return as soon as possible to normal conditions, the question of taxation is looming larger than ever in the eyes of the land owner. While no sane person will object to paying his proper share towards the upkeep and administration of his government, yet he wants to assure himself that such profits as he is able to make will not be all swallowed up in taxes of which he has had no hand in levying and from which he will get no direct benefits.

We all realize that a perfectly equitable system of taxation with every tax-payer and official of the exchequer satisfied, is something closely approaching the millennium. A system that is agreeable to a great majority of the people and is adequate to the upkeep of the country, therefore, is the best that we can hope to attain. Western Canada considers she has such a system.

Most people are nowadays becoming acquainted with the wonderful agricultural resources of the Canadian prairie provinces; of the heavy yields and prime livestock raised on their low-priced lands. These people have also heard of the low taxes the farmers there have to pay, yet very few are acquainted with the methods of levying such taxes and the manner in which the moneys thereby collected are spent. Many thousands of American and British farmers have purchased land in one or the other of these prairie provinces during the past few years, and many thousands have turned their eyes in their direction, and to these a brief synopsis of the system of taxation in force there will doubtless be of interest.

Annual Grants from Federal Government

It will be necessary first of all to go back to the time when these three provinces of Alberta, Saskatchewan and Manitoba were formed as autonomous parts of the Dominion of Canada. At that time the Federal Government reserved to itself all lands and natural resources which had

not previously been disposed of, and in return agreed to make an annual grant to each province based on its population. Thus, a large part of the revenue of the provinces is provided for without any direct charge on any of their people.

At the same time as this arrangement was made, the Dominion Government made provision for educational development by setting aside two sections in every township as school lands. This means that out of every thirty-six square miles of land in Western Canada, 1,280 acres are reserved to create a fund for giving the younger generation adequate educational facilities without any cost to the tax-payers. From time to time these school lands are sold by auction, the proceeds held in trust by the Department of Education, and the income derived expended towards the cost of erecting and keeping up schools in the rural districts.

These two sources of revenue are one of the chief reasons why taxes are so reasonable. Of course, the money derived is not sufficient to meet all the expenses of education, roads, telephones and all the manifold charges incumbent on a new country. It is with the means adopted to raise the balance that the prospective settler or tax-payer is chiefly concerned. There is one point to note, however. No part of the money he pays needs to be appropriated to the use of the Federal Government, and, as a rule, all of it is utilized in the locality in which it is collected. Indeed, the governing factor in determining the tax-rate is the needs of the locality.

Method of Administration

The general policy followed is similar in all three provinces, though naturally in each one small differences are bound to arise. For the purpose of administration, each province is divided into cities, towns, villages, rural municipalities and local improvement districts. Population is the basis of determining under which heading a settlement falls. To cite the case of Saskatchewan, a "village" must have a minimum population of 50, a "town" of 500, and a "city" of 5,000, while a rural municipality consists of nine townships (a township being six miles square) with a minimum population of one person per square mile. A local Improvement District is unorganized and is under the direct legislation of the Provincial Government.

Each city determines its own method of taxation in accordance with its charter, but it is with the rural districts that we are chiefly interested. Here we find two outstanding features. The first is that the "single tax" has everywhere been successfully accepted. The second, no less important than the first, that the governing body of each municipality, or "council" as it is called, has the power of deciding what the rate will be in its own particular district. Every farmer and member of the community thus has a voice in the amount of taxes he himself will pay. Since the sum raised is to be spent in the same neighborhood, the amount levied will depend on the improvements decided on in that locality.

The system of "single tax" in force is one that has been directed towards the fullest assistance to the farmer, shifting the burden of taxation as much as possible from the back of the man who is developing his property to that of the non-resident owner who, as likely as not, is holding it for a speculative profit. Taxes are paid only on the land itself, which is assessed at the same valuation as adjoining unimproved lands of the same class. The farmer's buildings, his personal property and his improvements are not taxed, as it is felt that the man who is leaving his land unproductive should not be favored at the expense of the man who is making his home there and adding to the wealth both of the community and the province. As an additional deterrent to land held for speculation, a provincial tax of one cent an acre, known as the "Wild Lands' Tax," is levied on all land which is not under cultivation or used as pasturage.

Summary of Annual Taxes

The following is a short summary of the average taxes paid during the past year in the province of Alberta, and, with minor differences, may be taken as typical of all Western Canada:—

In a Municipal District the maximum municipal rate is limited to ten mills on the dollar, or 1% of the assessed value, or 10 cents per acre where the rate is levied on an acreage basis. The rate actually levied last year, however, was approximately 8 mills on the assessed value, or 7½ cents per acre on the acreage basis. If the municipal district also contains a rural school district, a rate is struck by the School Board to sufficiently supplement the Government allowance. In 1920, this averaged about 9 mills on the dollar. A Supplementary Revenue tax of one mill on the dollar on the assessed value is also levied by the Provincial Government, which amounted to three and a half cents per acre.

The average farmer paid taxes on a quarter section (160 acres) during the year 1920 as follows:—

If in a Municipal District:

(Assessment per quarter section, say \$2,000)	
Municipal Tax, at 8 mills.....	\$16.00
School Tax " 9 "	18.00
S. Revenue Tax " 3.5c. per acre.....	5.60
Total.....	\$39.60

If the land is not cultivated, an amount equal to 1% of the assessed value, viz., \$20, will require to be added to the above figures.

If in an Improvement District and not in a School District:

Improvement Tax, at 5c. per acre....	\$ 8.00
Educational Tax " 1¼ " " "	2.00
S. Revenue Tax " 2½c. " " "	4.00
	\$14.00

If the land is located in a school district, another 10c. an acre will be added. The Wild Lands' Tax of 1% will also be charged if the land is not under cultivation.

In agricultural districts, taxes may also be levied for special purposes indicated by local necessity, such as the destruction of gophers and noxious weeds, hail insurance, construction of rural hospitals, etc.

The only other charge to which the farmer may be subject is the Income Tax, put into force by the Dominion Government since the war. However, no married man with a net income of less than \$2,000 is affected by this, and allowances are made for children.

While this system is not believed by anyone to be perfect, it has several marked advantages. Disregarding the Income Tax, the tax-payer practically taxes himself. He has only one set of taxes to pay. Simply because he improves his farm and makes his living from it, he does not have to pay more than his next-door neighbor who is holding the land in the virgin state against an increase in valuation. Rather, the reverse is true; the speculative owner is penalized for holding land which is not productive, but immediately such land is broken under the plow his taxes become less.

"God's Country"

By Frederick Niren

(Copyright in Canada) (Written at Kootenay Lake, British Columbia)

Seriously and soberly I sit down to attempt the task of discovering what precisely is this charm of the West that many feel. For some it is the Orient that calls—"Ship me somewhere east of Suez....."; for others the gateway to content is Canada, the St. Lawrence river;

Lake Superior is in their earthly paradise; and west of Medicine Hat is their well at the world's end.

As one greatly moved by the charm of the Canadian West I am competent to speak of it—though to explain is another matter! Yet, by the same token, must I go warily in this enquiry lest I remark only the sunlight upon the scene. So let me consider first an Englishman I know out here who, in course of a talk on Canada and the Old Country, told me he had not "made good."

"Still," said he, "I don't suppose I would have 'made good' in the Old Country; and I would a hundred times rather be poor here than poor in England."

Another, a cheerful girl to be sure, not looking for troubles or occasion to "grouch," but of the kind, I think, to "see life sanely and see it whole," said:

"Some people here have a hard time; but in England it would be a sordid time as well. It's not sordid here, even when it's hard."

A poor man in England can't take down his rifle, borrow half-a-dozen cartridges from a neighbor, and go out and shoot a prairie chicken for lunch. A poor man in England has not his boat drawn up on the shore, with trolling tackle in it, and a meal awaiting him in the water before his door, without payment of a license to procure it with little effort and no more work than many men seek out as relaxation. In some of the big cities there is occasional hardship. Too many people will flock to towns. But outside of Montreal, Toronto, Winnipeg, Vancouver, organized charity is not needed, and the length of occasional bread-queues in these places, in some seasons of "hard times," is as nothing compared with the length of like, and chronic, queues in the big cities of the Old Country and Europe. Further, it is amusing to one who gauges the word "poor" by English standards to hear from some westerner of his "poverty," and then be invited to go for a spin in his motor-car or in his motor-boat! There is no doubt that poverty out West is different from poverty in the East.

Wherein Lies the Spell?

But the spell? What of it? I do not think it is only from the scenery. The bigness of the land, the large manifestations of nature have their appeal and influence. Although Mr. G. K. Chesterton has wittily told us (chanting his love for one corner of fenced and field-patterned earth, and Patriotism; and vociferating his dislike for those who can say from their hearts, "This is my own, my native star") that what are called the spacious places of the earth are but vacant tracts, that suggestive writer is sometimes witty without being accurate.

There is a shrub called the tumble-weed which, in the late spring, becomes very brittle. When winds come they snap the stems, and the bush, released from its roots, goes bobbing off like a live thing. Looking across miles of plain, from horizon to horizon, one can see these bushes, sometimes a whole patch of them nipped off at the same moment, bouncing along before the breeze. It is nature's way of scattering the seed. On they go, looking, at a short distance, for all the world like a loping bunch of coyotes. To see the tumble-weed thus bouncing over long fenceless miles is a great experience.

Let a man leave the plains and go to some great city and he will find out what an effect such scenes had on him. Between the canon walls of skyscrapers he will almost inevitably long, with a longing hardly to be thwarted, to see the tumble-weed again, flying before the Chinook wind, over the long leisurely tolls of the Alberta prairies. There is something deeper than scenery in this.

Consider the Mountains

Or consider the mountains. These great slopes of a million fir-trees, out of which, above timber-line, the bald peaks soar up, ragged, to shine in the sun and hold in their crevices veins of snow, or in their long high valleys the great fields of glaciers, are not easily forgotten. Even those whose travels among such peaks are undertaken in

the quest for gold, silver, lead, or iron ores will, on occasion, seem more like poets than money-seekers, sitting by the hour talking of no more than the beauty of some high tarn, some tract of tall timber with its tassels of Spanish moss. They will tell of how they have crouched still as a stone, till they cramped, watching coney making hay, or bear-cubs boxing, or marmots at play. Let any of these men know that you have an eye for such things and an invitation is immediately proffered to "come up and see me in my camp." They do not only promise the opportunity of shooting bear, or goat, or elk. They hope for an opportunity for their guest to see the coney hay-making, or the cubs boxing. Unashamed they promise a view. It is generally "the finest view in all the country."

Yet the charm of the West (that is, of course, for those who are not utterly impervious to such charm, and lost and lorn away from their marine parade, esplanade, local pavement—Kensington High Street, Upper Street, Islington, or what not) is in more than scenery. Out of the landscape something comes; in just living there, there is something good. I think I know why the last of the cow-punchers call the Alberta foot-hills "God's Country," having been alone on the prairie there, with the Rocky Mountains along the horizon, a blue line with a broken crest of white.

As for the mountains, too, and their green tranquillity, I think I know what that something is, in the great scene, that is more than the scene. I think it is what the poets mean when they use the word "God." Where paving stones prevent grass, and sky-signs obliterate stars, there seems little in the nature of a god visible except the blue policeman on point duty.

Canada's Decennial Census

Canada's sixth decennial census since her birth as a united Dominion at Confederation in 1867 is at present in process of being compiled, and it is expected that the results when published will give Canada a population return well over the nine million mark. Altogether, the various works contributing to the exact and exhaustive undertaking will cost about two million dollars. For the compilation of the census an extra staff of about four hundred clerks are engaged at Ottawa, and the securing of returns employs 247 commissioners and about 13,000 enumerators.

It may not be generally known that the credit for taking the first census of modern times belongs to Canada, the year being 1666, and the census that of the Colony of New France. The results of this systematic enumeration at a fixed date, showing age, sex, place of residence, occupation, and conjugal condition of each person, are to be found in the government archives at Ottawa, the record showing 3,125 souls. In Europe, the first modern census dates only from the eighteenth century, and in the United States no census was taken before 1790, so that New France exhibited progressiveness of ideas ahead of the times when it instituted what has become one of the principal instruments of modern government.

In Canada, the fundamental reason for the taking of the census is the representation of the Federal Parliament. The British North America Act, which brought about a united Canada, gave the province of Quebec a fixed number of seats

(sixty-five) in the Dominion House of Commons, those assigned to the other provinces being pro rata of population. Thus the census is taken primarily to enable a Redistribution bill to be passed by parliament. The first census was taken in 1871, four years after Confederation, and they have been compiled at ten year periods since that time.

Census Covers a Wide Field

As, however, a tremendous organization has to be built up to secure this information on the people of the Dominion, it is put to every available use as a machine and made to cover a much wider field. The schedules used in the census are five in number dealing respectively with: (1) population, (2) agriculture, (3) livestock, fruit growing, etc., in towns, etc., (4) industrial and trading concerns, and (5) blindness and deaf-mutism. The population schedule carries some thirty-five columns recording for each person name, family, kind of dwelling, age, sex, conjugal condition, birthplace, citizenship, racial origin, language, religion, education, occupation, etc. That relating to agriculture elicits information on farm acreages, land values, buildings, implements, crops, fertilizers, farm labor, orchards, small fruits, farm gardens, livestock, poultry, animal products, forest products, irrigation, drainage, etc. The schedule on animals in towns secures statistics of horses, cattle, poultry, bees, etc., and their products within urban limits, and those of market gardens, orchards, etc., in towns and other centres. The schedule on business and industrial concerns collects only the name, address, and class of each, a detailed annual inquiry being conducted by correspondence by the Bureau of Statistics. The record of the blind and deaf mutes is to facilitate the work of educational and other institutions for these classes.

The nucleus of the organization which conducts the census is a small permanent staff of the Dominion Bureau of Statistics. The country is divided into "census districts" in charge of "census commissioners." Districts are divided in subdistricts, the territory allotted to a "census enumerator." The tremendous breadth of the work, covering, as it does, half a continent, may be imagined. For the remote and seldom penetrated regions of Ungava, Northern Ontario and the North West Territories, the organizations of the fur trading companies and various church missions have been engaged.

In other similar districts the Royal Canadian Mounted Police are taking the census, whilst the agents of the Indian Department are performing a like service for Indians on reserves and elsewhere. In many localities pack trains must be organized, steamers chartered, and long journeys made to ensure that no section of the vast Dominion escapes enumeration at the decennial census.

Canada's Immigration Classes

In the resumption of immigration on a substantial scale in the post-war period there have been several features of a gratifying nature to the Dominion of Canada. Canada as a bourne for new hopes, an outlet for pent-up energies, a land of great future for the creation of new homes has appealed to the highest and most intelligent types of people who have flocked thither in a resistless avalanche. Many of these people are possessed of substantial capital which they are investing in the farm lands and industries of the Dominion. Striking and pleasing, too, is the evidence of the main stream bound for the land, for those expansive, fertile partially cultivated tracts, the greater productivity of which is the prime factor of Canadian development.

It has been agreed among the best authorities on the question, in the absence of reliable statistics, that immigrants from the British Isles have brought with them in the past approximately \$100 per head to make a start in their new home. This figure was based on estimates of pre-war immigration, and whilst there are no statistics to go upon for the period since the war it would be safe to assume that for the year 1920, for instance, it could be considerably raised and still be conservative. The group hit most directly and severely by the war in England, and in which there is a greater proportion looking for a betterment of conditions in new fields, was the middle class, and this class has been found to largely compose the crowds which leave the liners at Canada's ports of entry.

Per Capita Wealth of Immigrants

The per capita wealth of persons immigrating from the United States has always maintained a much higher level, being largely in excess of the average from the British Isles, due without doubt to the large proportion of farmers who have sold their old holdings to purchase new farms in the Dominion. Varying estimates have been made by immigration authorities up to \$1,150 per person, and it would seem a very fair estimate to take an average of \$500.

A survey of immigration for the year 1920 illustrates the distribution of the various classes which make for the most agreeable assimilation. It is gratifying to find that still the overwhelming majority of immigrants went on the land. Of the adult immigrants entering Canada by ocean ports and border ports, 19,185 were of the farming class or declared their intention of settling on farms; 6,821 were laborers; 9,283 mechanics; 2,720 were of the trading class; 538 miners; 996 female servants, and 9,721 unclassified.

The gratifying feature of United States immigration to Canada has always been its large proportion of farmers and agriculturalists, and in

the year 1920 this was substantially maintained, of the 19,185 men who intended following the profession of farming, 16,177 being from the various agricultural states of the Union. The laboring class accounted for 3,882, or a little more than half of the total of this transient calling. There were 5,931 mechanics or more than half of the total machinists. The trading class from the United States accounted for almost the total of this category with 2,008 out of 2,720, whilst the 342 miners made up more than two-thirds of the immigrating total of this class of labor. Of the total 996 female servants listed on the returns, 578 came from across the line. There were 6,842 tabulated as unclassified.

Many British Industrials

British immigration to Canada has always had a tendency towards the industrial centres rather than the land, and with 800 followers in the 1920 figures, the class of mechanics looms up largest, those who avowed their intention of following agriculture accounting for just more than half this number with 472. There were 340 laborers and 186 of the trading class. Whilst only 86 are listed from the British Isles as domestic servants, this would presuppose the omission from statistics of those government conducted special parties of this class of labor which reached fairly high figures. There were 598 persons from the British Isles entered in Canada as of unclassified professions and callings.

The United States human contribution to Canada is always most pleasing on account of its locating where most needed; Great Britain is apt to send more to the industrial centres than to the land, and laborers and female servants are largely made up of those immigrants coming from other European countries. The maintaining of an equitable balance of classes in 1920, as illustrated by the figures, has made for rapid and agreeable assimilation, the most valuable asset in development in times of economic stress.

The Labor Situation

A survey of the labor situation in Canada for the month of May, 1921, is more encouraging than for some time past, and warrants optimism for the immediate future. The review discloses a further decline in the cost of living, as illustrated in the cost of a weekly family budget of staple goods, and a general improvement in wholesale and retail trade throughout the Dominion. There was an increase in the volume of employment, activity being especially noticeable in building construction, the value of permits taken out being nearly double of that of the month of March.

In the logging industry, there was a decline in the Maritimes, due to the completion of river driving. In the provinces of Ontario and Quebec,

the same conditions prevailed, whilst the season in British Columbia is also dull. An abnormally late season caused late driving in Manitoba. Mining was below normal in the Maritimes, but brighter than the previous month. There was a decline in Alberta, but increased activity in British Columbia.

Average Cost of Family Budget

The average cost of a list of twenty-nine staple foods in sixty cities at the beginning of the month was \$12.25, as compared with \$12.68 in April, \$16.65 for May, 1920, and \$7.42 in May, 1914. The total for foods, fuel and rent in the sixty cities averaged \$22.84 in May, as compared with \$23.31 in April, \$26.44 in May, 1920, \$21.92 in May, 1919, and \$14.19 in May, 1914. The chief changes for the month were decreases in eggs, milk, butter, and potatoes, with slight increases in nearly all the other items. Coal, wood and coal oil registered slightly lower. Rents for the main part averaged higher.

The departmental index of wholesale prices stood at 247.3 for May, as compared with 253.7 for April, 356.6 for May, 1920, 275.8 for May, 1918, and 136.3 for May, 1914. The chief changes for the month were decreases in dairy products, animals and meats, grains and fodder, textiles and in building materials. There was a slight recovery in the prices of zinc, quicksilver, antimony and tin. Iron products continue to ease off gradually. All the groups were lower than a year ago, and nearly all lower than two years ago.

Minerals of Nova Scotia

The Maritime province of Nova Scotia, which looms in the world's eye as one of the foremost fish-producing areas of Canada and the globe, has other sources of natural wealth partially exploited which, whilst important producing national assets, are inclined to suffer an overshadowing from the prominence the first industry of the province has attained. Among these latter are the province's mineral deposits. Whilst yet largely undeveloped, the provincial mines accounted in 1920 for the not insignificant sum of \$30,187,533 of the Dominion's total mineral production of \$217,775,080.

Nova Scotia has a wealth of coal resources, with an estimated reserve of 9,718,968,000 tons, and up to the present year, when Alberta achieved the highest provincial output, she led the provinces of the Dominion in production. In 1920, the coal mines of the province produced 6,500,000 tons out of the Dominion total of 16,968,658 tons, or 38 per cent. There are in the province four coal fields with thick seams. The most important of these is the Sydney coal field on Cape Breton Island, which supplies 76.9 per cent of the Nova Scotia output and has an area of about 200 square miles. The Inverness

field, a series of areas extending for fifty miles along the western shore of Cape Breton Island, supplies 4.3 of the product, and the Pictou field on the mainland, containing about 25 square miles, supplies 8.9 per cent. Further west on Chignecto Bay is the Cumberland coal field, supplying 9 per cent of the total.

Coal, Iron and Limestone

There would appear to be a bright future ahead of the Nova Scotia coal fields, and the recent heavy shipments to the British Isles had a great significance. The mines are practically all on, or within a few miles of, tidewater and good harbors so that the transportation problem becomes a relatively simple one. The quantity of coal available is enormous and opportunities exceptional for the invasion of other fields for export.

Though Nova Scotia may be considered fairly wealthy in iron ore, this mineral is distributed in comparatively small beds and pockety deposits, making it a most difficult matter to compete with the hematite of Newfoundland. The Londonderry mines which were opened in 1849 have been idle since 1908, and those in Annapolis County, though yielding 350,000 tons between 1891 and 1913, are no longer worked. The supply of iron ore utilized in provincial manufacture is obtained from the adjacent island of Newfoundland, the distance of shipment being 400 miles.

The province is rich in limestone, all the quarries being located on Cape Breton Island, comprising the Marble Mountain quarry worked by the Dominion Iron and Steel Company and the George River quarry and Point Edward quarry of the Nova Scotia Steel Company. With abundant coal on the spot, with iron ore of very high quality in unlimited amounts obtainable close at hand by cheap water shipment, and with harbors such as Sydney and Louisburg available summer and winter for export up the St. Lawrence into the heart of the Dominion or any other part of the world, Nova Scotia has all the requisites for unlimited development in the iron and steel industry. The total production of blast furnace pig iron in Nova Scotia in 1919 was 285,087 tons, valued at \$7,141,641, and in 1918, 415,879 tons, worth \$10,451,400.

Oil Shales and Gold

In Pictou County there is an undeveloped area of about ten square miles estimated to contain 500,000,000 tons of oil shales which should prove of great importance not only for its high percentage of oil but from its position in the heart of the manufacturing district and its accessibility by sea. Antigonish and Colchester counties also contain valuable areas of oil shales.

The recovery of gold in small quantities has been made in Nova Scotia since 1860, and in all since that time, 958,712 ounces have been

extracted. The mineral is found in quartz veins widely distributed over a large area. In 1862, \$142,000 worth of gold was taken out, and the value of ore crushed per ton, down to and including 1917, has been \$8.80 with an average yearly yield of 19,130 ounces. The Oldham gold field, 25 miles north of Halifax, has been worked continuously since its discovery in 1861, whilst there are also producing mines in the Tangier River and Cariboo districts. The Goldenville district, east of Halifax, has for some time been the heaviest producer, while a mine at Kemptville has netted some remarkable returns.

The 1919 production of the province amounted to 935 ounces, and considering the number of finds and their wide distribution an increase may be looked for and Nova Scotia considered among the first five gold-bearing areas of Canada.

Lignite Utilization Board of Canada

By Leslie L. Thomson, Secretary

Though possessing 17% of the known coal resources of the world, the fuel supply for the people of Canada, widely separated as it is into Atlantic and Pacific fields, is an ever present problem. To assist in overcoming the difficulty and take advantage of large deposits of lignite underlying various districts of the Provinces of Alberta and Saskatchewan, some of which in the raw state can only be utilized when freshly mined and are therefore unsuited for household use, the Dominion Government in 1918, by an Order-in-Council, created the Lignite Utilization Board of Canada.

It was found that, by carbonizing this lignite, a coke or charcoal was obtained which briquettes readily, and without consideration of the by-products, such as oil, pitch, ammonia sulphate, gas, etc., the result is to turn two tons of inferior fuel into one ton of briquettes, approximating in heating value anthracite coal with practically the same heating value in the domestic furnace as the two tons from which it was made.

In its relation towards business interests, the Board has the powers of an incorporated company to buy, sell, make contracts, hold property, etc.; in its relation to the Government, it is a trust, holding an expending fund

provided by the Government and having power to hold property in trust. Its immediate objective is the carbonizing and briquetting of the lignites of Southern Saskatchewan for domestic use.

Western Canada has heretofore imported about 500,000 tons of anthracite from Pennsylvania at a cost of approximately \$5,000,000 a year.

Commenced Operations

The Board started operations on October 1st, 1918, with Mr. R. A. Ross, Chairman, and the three months of 1918 were given up to a study of all accumulated correspondence, and to a tour of inspection by our engineers of all briquetting plants and of the more important coal treating and handling plants in Canada and the United States.

The year 1919 was given up to an experimental investigation of the carbonization and briquetting of lignite. This investigation was made necessary by the fact that at its inception the Board discovered that a great deal of the information extant on the question of lignites was unreliable and to some extent misleading. The prosecution of such an experimental programme resulted also in avoiding the excessive cost of mistakes in full scale apparatus. This work was undertaken at the Board's own laboratory in Ottawa, erected through the courtesy and co-operation of the Mines Branch, Department of Mines. The specific subjects investigated were storing quantities of lignite; methods of carbonization of lignite including such sub-topics as specific heat, rate of carbonizing, retort temperatures, retort atmospheres, effect of moisture content on carbonizing; methods of briquetting, effect of

fineness, effect of moisture, action of various binders and quantity necessary; investigation of physical properties of briquettes and their resistance to alternate drying and freezing.

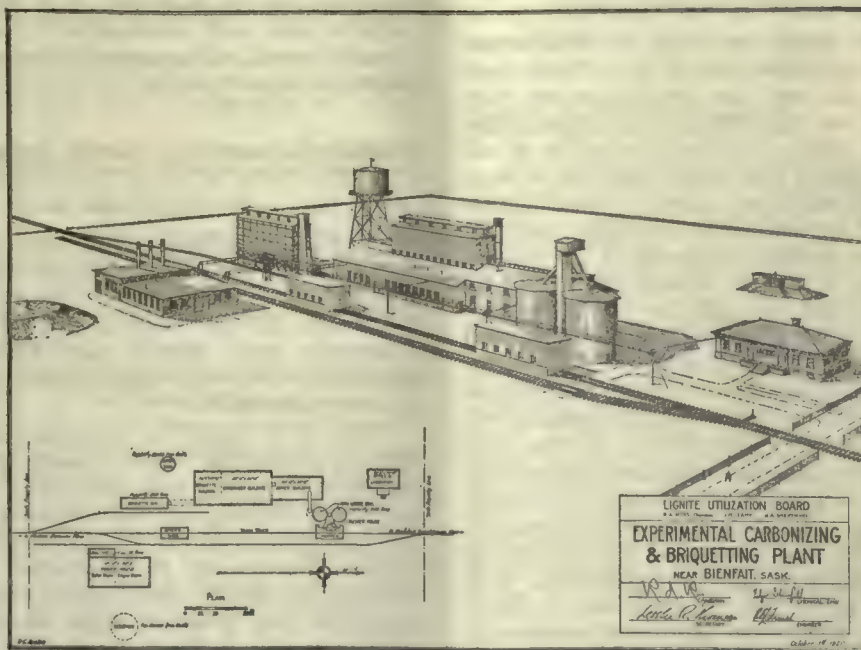
The measure of success achieved in the experimental investigation during 1919 enabled the Board to decide to proceed with the erection of its main plant near the town of Bienfait, Sask., during the season of 1920. Consequently

contracts were let, and in spite of the grave difficulties due to delay of delivery of machinery and equipment, the end of the year saw the plant well on to completion.

During the present year (1921) the Board has completed its plant and completed the installation of its machinery. A preliminary start in manufacturing briquettes has been made.

Results to Date

In brief the net results of the Board's activities to date are as follows:



A great deal of valuable information respecting the carbonization and briquetting of lignite has been collected. In fact the position that the Board occupies in regard to the lignite industry is so well recognized that it is in receipt of requests for technical information from all parts of the world.

A special type of retort for carbonizing lignite has been developed by the Board. Its operating principle is entirely novel, and though no specific prophecy can be made at this juncture the Board has every expectation of success. Patents have been applied for on this process and apparatus in all the leading countries of the world.

Binders suitable for carbonized lignite have been thoroughly investigated. The performance of all the well-known binders has been investigated and their action both when used alone and in combination with others has been determined.

The Board is devoting the first period to adjustment, that is to say, it will be necessary to determine temperatures, operating speed, etc., and many similar details for all the apparatus that has been installed. It is inevitable that certain weaknesses will be discovered and these must be remedied. As soon as possible, however, a commercial briquette will be produced and marketed through the ordinary channels of trade. The total capacity of the plant will be 30,000 tons of briquettes per annum.

It is expected that a successful outcome of the development undertaken by the Board will result in the establishment of an industry of national importance.

The Dominion's Marble Resources

Canada has large resources of ornamental building stone or marble which so far have been largely neglected, and the announcement that the country is on the verge of a tremendous building boom, when building materials of all kinds will be called into requisition on a large scale, draws attention once more to these hidden stores and the opportunities awaiting their development. As pointed out by W. H. Matthews, Manager of the Canadian Marble Company at Toronto, the prime necessity is capital, which, with proper co-operation and management on the part of those concerned already in the field, will result in the development of the industry so far as to eliminate the necessity of importation.

As Mr. Matthews points out, in the past most of the stone entering into the construction of many of the larger and more important buildings throughout the Dominion was imported, with its equal in every way, and in many cases its superior, resting at home not quarried. It is not generally known that Canada has, in Hastings County, Ontario, vast deposits of ornamental stone or marble, which have been pronounced as second to none of the best offerings of the world's ornamental stone markets by experts who have seen and examined them. From these deposits replicas of most of the foreign marbles can be obtained, duplicating, in every way, the quality, texture and strength.

Many Varieties and Colors

The strata from which the Hastings marbles are taken are compactly grouped in a wonderful

assortment of varieties, white, colored, bread and butter, monotone, and variegated. Another location of fine marble is in Peel County, which supplied the stone entering into the construction of the façade of the Ontario Parliament buildings, and which is acknowledged to be at the very top of its own classification. Other locations of marble deposits in Ontario are in the counties of Lanark, Frontenac, Leeds, Haliburton, Renfrew, Peterborough and Victoria. There are in all, four quarries operating in the Hastings area and two in other parts of Ontario, namely, Lanark and Stormont. In Quebec, marble is known to exist in quantities in the districts of Phillipsburg, South Stukely, St. Thècle, and Portage du Fort, whilst quarries exist and are operated at Beauce, Champlain, Missisquoi, Pontiac and Shefford. On the other side of the continent, marble has been found at Kootenay Lake, Texada Island and in the Nootka Sound region of British Columbia, with operations under way at Vancouver Island, Texada Island and two quarries in the Lardo district.

Not only is Canada able to supply her own needs in this respect from her tremendous stores of such high quality, but in the opinion of authorities on the question, her wealth of possession justifies the building up of the industry in architectural and ornamental stone to develop it under good management to engage in a considerable export trade.

British Columbia's Shark Industry

By E. B. Buchan Reesor

Catching sharks in the mud between two islands in the Gulf of Georgia about twenty miles distant from the City of Vancouver, British Columbia, is the employment of the A.B.C. Company, and a week's catch recently totalled 80 sharks, with an average weight of one and one quarter tons each.

Mr. J. J. Kerr, of Victoria, the capital of British Columbia, talks interestingly about the industry, pointing out that the possibilities in the shark catching and shark products industries are tremendous on the North Pacific coast. Mr. Nelson Macdonald, of Vancouver Island, is of the opinion that if the shark industry were well organized and financed there would be enough money in it, within a short time, to pay the whole debt of the Province of British Columbia.

"There are millions of sharks in these North Pacific waters," says Mr. Macdonald, "and there will never be a shortage of them. The further North you may go the more sharks you find, and from Vancouver to Alaska are their feeding grounds. Taking them from the bottom of the sea is automatic. Norway has a hundred of such industries; in fact, the only real hook for catching them works on a swivel and comes from Norway, as does also the so-called 'Cod Liver Oil' which

invades the markets of the world; it is really shark liver oil, manufactured in Norway."

In the shark plant, when the huge fish is being turned into so many substances and articles, there is absolutely no waste.

Various Processes and Bi-Products

Business men from Vancouver, Victoria, Seattle and other North Pacific seaport cities, sat around a table in Victoria, Vancouver Island, recently, where a firm from Seattle showed the various processes through which sharks passed and the results attained in glue, leather, fertilizer and other marketable and needful products.

The head of the shark is full of glue of a highly valuable quality.

The bodies make a finer fish meal than any other made. As a fertilizer it is superior to dog-fish because in the shark carcasses there is only two per cent. of oil, while in the dog-fish, oil is so plentiful that it takes an expensive chemical process to separate it from the body.

The fins are much prized by the Chinese as a food delicacy, and Orientals in Vancouver pay as much as \$3.00 a pound for it.

The liver contents run from 60 to 70 per cent. of finest oil, of which about ten per cent. is glycerine.

The teeth are in great demand and fetch a high price for the making of ornaments.

The few bones go into the fertilizing part of the industry.

The hides are of the greatest interest to the manufacturer. Several companies have been formed, and much research work has been done in connection with their possibilities.

At the meeting, a Seattle company showed a large number of shark hides in every stage of tanning. Many of the men assembled were "leather men" and they fingered the products carefully, and satisfied themselves that the leather business was entering the initial stage of making up goods of which, heretofore, they had had no conception.

The shark hides run from an inch in thickness in the older fish to the consistency of paper in the baby shark. Soles of boots, leather for the finest suede shoes, a black pigmented product that would make club bags of most lasting quality, uncrackable lengths of leather that outstripped any patent leather ever made, and which the leather shoemen said was the finest they had ever seen, were among the goods exhibited, and the thought of all this material right at hand was a revelation to men who had known there were sharks, but thought of them only as a pest to swimmers and destroyers of marketable fish.

Methods of Operation

In Seattle, hip-boots from shark hides are being made, and one Vancouver boot maker has been using shark leather for boots. Finer grades of the tanned leather are used for upholstering, colored and stamped; it is ever-wearing and rich to look upon.

The outer skin, or "shagrin," must come off in the first place, and a process has been successfully developed which takes this away. It has the exact properties of sand-paper of the rough variety. For very fine work on wood polishing, the "shagrin" of the baby shark cannot be excelled. Underneath, a section torn off reveals one of the greatest properties of the shark hide. This texture is woven and interlaced as if by a machine, and its extraordinary durability has never before been known in any leather.

It takes fifteen days of specialized process to turn out shark leathers, and six months, or more, treatment to prepare sole leather.

Some of the thinnest hides puzzled the gentlemen at the table, they were so transparent looking, and yet so strong that nothing like them had been inspected in the experience of experts. These were made from the stomachs of sharks, and can be worked up into beautiful cloths, being soft and pliable.

Mr. Nelson Macdonald looks forward to a time, in the not distant future, when British Columbia will have as many, if not more, shark catching and manufacturing plants as Norway. "Here they are right at out Western Door, waiting to be made use of, and the industry is going to develop into one of great magnitude and many dollars."

Quebec's Forest Wealth

The value of Quebec's standing timber, based on a careful study of the reports made by explorers, cruisers and forest engineers, is placed at \$600,000,000, according to the *Canadian Forestry Journal*. This estimate only includes such timber as is merchantable, and neglects wholly the young stock. The quantity of standing timber is placed at 38,550,000,000 feet, of which total, spruce, balsam, hemlock and other odiferous species aggregate 15,625,000,000; cedar, 2,500,000,000; pulpwood, 12,500,000,000; white and red pine, 3,750,000,000; hardwoods, 4,375,000,000. Spruce, balsam, hemlock and other odiferous species lead in value with \$250,000,000; followed by red and white pine valued at \$200,000,000; pulpwood, \$100,000,000; cedar, \$25,000,000; and hardwoods, \$25,000,000.

The greatest revenue derived from this vast natural heritage is through the manufacture of spruce and other pulpwood species into pulp and paper. At the last census of the pulp and paper industry in Quebec, taken in 1918 by the Dominion Bureau of Statistics, the total value of pulp and paper produced is given as \$45,229,130; capital invested \$101,456,296; and the annual capacity of pulp and paper mills 1,045,646 tons.

While the greatest revenue is secured through the pulp and paper industry, the lumber industry, which is much older, produced in 1918 the sum of \$21,906,373 in revenue. The manufacture of

timber into lumber provided the largest share of this sum, bringing in \$20,916,604, followed in order by shingles \$775,058; and laths \$214,711.

Quebec has always been to the fore in the conservation and reforestation problems of her forests, and strict laws have been imposed making it illegal to cut balsam and swamp spruce with a diameter under seven inches and twelve inches upon all other spruce. Consequently, there is a very considerable amount of this timber, comprising the capital of growing stock, which is not allowed to be cut because of this restriction.

Forest Protection

In 1920, the provincial government in co-operation with various pulp and paper companies inaugurated a hydro-plane service for the protection of the forest. The ease and rapidity with which these machines can cover large areas of land is a valuable factor in combating forest fires, making timber cruises, surveying the land for good water courses, aerial photography and in many other ways helping to conserve Quebec's forest wealth.

Recently, four of the employees of the Provincial Forest Service—graduates of the Forest School at Laval University—were sent to Europe by the government, to spend a period of six months in making advanced studies of forest practice and utilization in France, Belgium, Switzerland and Germany. Particular attention will be paid to saw-milling, silvicultural practice, reforestation, aerial photography, forest research, wood technology and wood utilization, including the development of markets for hardwood species through small wood using industries.

It has been estimated by competent authorities that, with proper management and direction, the forests of Quebec will produce an annual growth of three million cords of pulpwood on licensed Crown lands, one million on unlicensed Crown lands, and one million on privately owned lands, making in all a total of five million cords. This does not include species which cannot be used for pulpwood. Based on the 1918 cutting, the available supply should last approximately half-a-century or more, providing conservative and reforestation methods are used.

Municipal Hail Insurance

One of the inevitable misadventures of the pursuit of agriculture which both a farmer's assiduity and exacting care are powerless to safeguard or offset is a hail storm, and practically all territories where cereals are an important crop periodically suffer in common in this regard from the devastating blight. For a considerable time, under various schemes and companies, it has been possible for the Canadian farmer to insure his crop against the onslaughts of hail, and so face the summer months with a greater

degree of calmness and assurance. In the past two years, however, the provinces of Alberta and Saskatchewan, two of the world's most important grain areas, have gone a step better and instituted systems of municipal hail insurance.

Saskatchewan Act

The Saskatchewan Hail Insurance Association consists of one delegate from each municipality which has come under the scheme by a majority vote at the annual municipal elections. A board of nine directors holds office for three years. Land in the municipalities under the scheme is assessed at four cents per acre together with an additional rate per acre fixed annually by the directors to be levied on land of an owner or occupant under crop in excess of forty acres. Every person liable to assessment under the Act must, by the first of June each year, file a report giving a legal description of his land and the number of acres under crop. Failing such a report the facts are ascertained by an official whose declaration binds the owner or occupant.

Crops are insured against damage from hail from June 16th to September 15th, and the owner of a crop which is damaged must, within three days, give notice, when an inspector inquires into the claim and reports. Each claimant is entitled to receive not more than five cents per acre for every one per cent of damage from hail he has sustained. When a crop is damaged less than five per cent no indemnity is due. Damage throughout the same season and upon the same area is treated as cumulative.

Alberta Act

Through the Alberta Municipal Hail Insurance Act, municipal districts to which the Act applies are brought under it by a favorable vote of the electors. Members of the board hold office for three years. Every person owning land in the hail insurance district is required to report before June 15th every year the acreage of the land owned or occupied by him, the acreage and location of each crop sown, and the amount of insurance per acre desired, which may be six, eight, or ten dollars per acre. All crops of wheat, oats, barley, flax, rye and speltz are insured from June 15th to September 15th, and fall wheat and rye from June 1st to September 15th. No liability for indemnity exists when the damage done is less than five per cent of the portion of the crop injured.

The premium for hail insurance is levied on the crop area only, at so much per acre, and the board has authority to levy a rate sufficient to pay the costs of administration, the losses in full for the year, and also to create a surplus for the year of not less than ten nor more than twenty per cent of the losses of that year.

Motion Picture Films

A print of each of the following films issued by this department is deposited with the representatives listed on the back page. [These are available upon application for use by schools, theatres, clubs, societies, boards of trade, and other associations and organizations.

Homemaking by Irrigation.—Irrigation farming in Southern Alberta, the various operations and their results.

The Land of Promise.—Featuring the well-known agricultural section of Battleford, Saskatchewan.

Opportunity.—Illustrative of Western [Canadian opportunity, more specifically in the district of Lloydminster, Alta.

Livestock and Dairying.—The fine status and remarkable progress of this industry in Western Canada picturized.

Taming the Last West.—Depicting the evolution of the Canadian West from buffalo range to a modern agricultural area.

The Sunny Side of Rural Life.—The farmer on holiday, showing that life in Western Canada is not all work.

The Evolution of a Grain of Wheat.—The life of wheat seed from the time it is sown until its progeny enters into the composition of a loaf of bread.

Apple Growing in Evangeline's Land.—Orchard ¹cult in the region Longfellow's poem made famous.

The Apple Harvest of the Okanagan.—Gathering and shipping apples in the beautiful British Columbia valley.

Curing Fish in Nova Scotia.—Depicting the various phases of curing and smoking fish in the Maritimes.

The Canadian Sardine.—The sardine caught, canned and distributed.

Some Water Powers of Eastern Canada.—The beautiful and powerful waterpowers of the Eastern Canadian provinces.

The Silver Fox Industry of Canada.—The domestic ranching of silver foxes in Prince Edward Island.

Departmental Publications

Any of the following publications will be sent free on request.

Alberta, Saskatchewan and Manitoba.—A descriptive statistical booklet on the three prairie provinces with full information on the West.

The Park Lands of Central Alberta.—Descriptive of the area tributary to the Calgary and Edmonton line of the Canadian Pacific Railway in Alberta. History, description of soils, development, lands open for settlement, and information for settlers.

Irrigation Farming in Sunny Alberta.—Full description of Alberta's irrigated lands, their progress, production and possibilities.

Business and Industrial Opportunities in Western Canada.—Full listings of industries existing and business openings in the provinces of Western Ontario, Manitoba, Saskatchewan, Alberta and British Columbia.

Canadian Pacific Reserve Farm Lands in Lloydminster and Battleford Districts.—Information of Canadian Pacific lands in these districts, history, farming information, progress, and possibilities.

Canada's System of Government.—Canadian government briefly outlined to portray its democratic traits.

The Story of Canadian Nickel.—History of the nickel mining industry.

Canadian Oil Exploitation and Prospects.—An expert engineer's history of Canadian oil development and future possibilities.

Canadian Water Power Development.—Authoritative and exhaustive survey of water power reserves and possible development.

Paper Pulp from Flax Straw.—An investigation engineer shows the possibility of the development of a new industry in the West.

A Canadian Grain Handling Plant.—How Canadian grain is stored and shipped. Authoritative article on Canadian elevators.

Value of a Settler to Canadian Railroads.—Computation from reliable statistics of a farming settler's revenue-producing worth to Canadian railroads.

Bituminous Sands of the Athabasca Region.—Description with known values, and possibilities of development of the widely known tar sands of Northern Alberta.

The New Canadian Oil Field.—Dealing with the Arctic oil region of the new strike.

Water Powers of the Maritimes.—Authoritative article on the undeveloped power systems of the Eastern provinces.

Water Powers of Manitoba.—The water powers of this province dealt with exhaustively.

Oleomargarine.—History of oleomargarine in Canada and its future prospects.

Synopses of Natural Resources.—Forty-five pamphlets dealing briefly but concisely with Kaolin or China Clay, Oil Shales, Mica, Fluor-spar, Asbestos, Molybdenum, Magnesite, Fruit, Flax Fibre, Nickel, Coal, Clays, Salt, Copper, Zinc, Silver, Gold, Pyrites, Iron, Potash, Talc, Feldspar, Platinum, Phosphate (apatite), Manganese, Graphite, Cement, Barytes, Gypsum, Irrigation, Petroleum and Natural Gas, Corundum Sulphates of Sodium and Magnesium, Timber and Pulpwood, Fish, Fur, Peat, Grazing Lands, Mineral Waters, Building and Ornamental Stone, Whaling, Sealing, Wheat, Oats and Barley, and Water Powers,

The Department of Colonization and Development

The Department of Colonization and Development has the following offices established in the United States, Great Britain and Europe, whose representatives, at any time, will be glad to furnish information regarding Canadian agricultural, industrial and commercial enterprises.

MONTREAL, P.Q.	E. G. WHITE, Supt., 335 Windsor St. Station.
WINNIPEG, Man.	J. F. SWEETING, Industrial Agent, Canadian Pacific Railway.
CALGARY, Alta.	M. E. THORNTON, Supt. U.S. Agencies, Ninth Ave. and First St. East.
VANCOUVER, B.C.	E. J. SEMMENS, Trav. Industrial Agent, Canadian Pacific Railway.
NEW YORK, N.Y.	L. F. MOWREY, District Representative, Canadian Pacific Bldg., cor. 43rd St. and Madison Ave.
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or any agent of the Canadian Pacific Railway Company or Canadian Pacific Ocean Services, in United States, Great Britain, or Europe.

J. S. DENNIS, CHIEF COMMISSIONER,
Department of Colonization and Development,
Canadian Pacific Railway Company.

Ask the Canadian Pacific about Canada



Agricultural and Industrial Progress in Canada

A monthly review of Agricultural and Industrial progress in Canada, published by the Department of Colonization and Development of the Canadian Pacific Railway at Montreal, Canada.

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MONTREAL

August, 1921

Essentials To Canada's Prosperity

IT is obvious that two great things are necessary to this country's prosperity" said Mr. E. W. Beatty, President of the Canadian Pacific Railway, when interviewed recently. "One is the backing of foreign capital for new enterprises in order that our national wealth may be properly realized and the second is more people to aid these industrial conditions, extend the farm areas under cultivation and by their number and financial solvency ease the burdens of the country."

"We should do everything we legitimately can to firmly establish the resources of Canada in the minds of those whose financial support is so essential and we should be very careful not to frame our immigration policies on the principle that a temporary depression and temporary unemployment is a justification for barriers against the introduction of a good type of immigrant into this country.

"It seems to be the assumption that immigration is like a tap that can be turned on and off with absolute freedom. This is not the case. It must be a continuous flow of the right kind of people if we are going to carry our burdens with anything approaching ease. By all means let us exclude permanently those undesirables from the slums of large cities and from countries, the complexion of which makes it impossible for their people to be assimilated into this country. We know now what type of immigrant succeeds in Canada. We can point to races, the representatives of which contain

no idlers in this country—people who are nationally and naturally thrifty and hard working and rarely, if ever, become a charge on the community. We know too the type of people who add nothing to the productivity of the country, who are parasites living off others by their wits but increasing not at all the national estate or the economic strength of this country. We do not want and should not encourage these people.

"Coupled with an active desire expressed through a sane immigration policy to obtain settlers of the right type for Canada should be a system of acceptance or rejection at the port of embarkation so as to reduce to a minimum the sometimes almost inhuman practice of returning rejected immigrants from a Canadian port. This could be readily arranged, of course, in the case of all British immigrants but would be somewhat more difficult in the case of continentals where the system is of the greatest importance.

GOVERNMENT ESTIMATE

1921 CROP ACREAGE

Crop.	Acreage.	Increase per cent.
Wheat,	18,737,000	3
Oats,	15,395,700	-3
Barley,	2,538,700	-1
Rye,	728,320	11
Flax,	786,100	-45
Hay & Clover,	10,534,200	1
Potatoes,	746,000	-5

"I see nothing in the future which would render desirable unduly restrictive measures in the matter of immigration."

In his allusion to immigrants easily assimilated, none of which have become charges upon Canada, Mr. Beatty, excepting naturally those from the British Isles, had in mind the people from Scandinavian countries, from Holland and from Northern Italy. To people of this type it was his obvious opinion that no barriers should be erected, that their coming was essential to the well-being of Canada and to the lessening of the tax burdens of Canadians.

Agricultural & Industrial Progress in Canada

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Norman S. Rankin, *Editor of Publications.*
E. L. Chicanot, *Asst. Editor.*

General Agricultural Situation

By G. H. Hutton, Supt. of Agriculture and Animal Industry, C. P. R., Calgary.

The Prairie Provinces, July 15th.—Speaking generally crop conditions on the Prairies this year are above the average. The Province of Manitoba and the greater part of Saskatchewan have enjoyed liberal rainfall throughout the growing season. The Northern and Central districts of Alberta are good, but more particularly the Northern section. Southern Alberta and South-western Saskatchewan were unusually dry up to July first, when the drouth was broken by fairly general rains throughout this area. During the first week in July these rains represented a total precipitation of from one to two and a half inches in many districts. There are however, a few areas where the rainfall has not been as heavy where more rain is still greatly needed. While there are certain districts in these drier areas which may not realize a half crop even with favourable conditions from now on, yet taking the whole of the drier area into consideration a fifty per cent. crop is expected.

Based on present quotations for October delivery the grain price outlook is fairly satisfactory. It cannot be said however, that the outlook for prices of livestock is as satisfactory as the price for cereals. While the price of wheat is less than half the quotation of a year ago, yet with the somewhat reduced costs in connection with crop production, the future is not altogether disappointing. The price of good cattle is not only low, but at present the demand is not at all keen for the best stock. Much of the stock has been produced at great expense and a three-year old steer which is going to market this fall has been produced under conditions of unusually high feed and labour costs. Such stock when marketed this season will represent a very heavy loss.

Livestock.—In the case of sheep and hogs the outlook is better, though the fluctuations in live hogs in Western markets indicate a very panicky situation.

Heavy horses are in fairly good demand, but light horses cannot be sold. The situation at present would indicate that the man who is breeding the right type of horse, or who is handling the right type of sheep or hogs has a good chance to win out. In respect to cattle it would appear that it is absolutely necessary for us to find a more satisfactory market for our finished beef than is available at the present time.

British Columbia, July 18th.—The season's first crop estimate by the District Horticulturist for fruit districts from C.P.R. main line to Keremeos shows big increase over previous predictions. Prefacing estimate, Government states that report is justified owing to quick development of fruit and close check that has been made throughout valley. A total of 4019 cars is given for apples compared with 1800 cars last year and 2800 in 1919 which was bumper crop year in the Okanagan Valley. Fruit shippers are not worrying over market problems pointing out that the prairie consumption is increasing and that prices are less than those prevailing during the war. Steady

demand for apples from overseas, from New York and Eastern and Canadian markets. The following is summary for all province; Apples, 10% over 1920; peaches, fair to good crop; plums, 90% of full crop; pears, generally good; cherries, Sour, fair crop; Sweet, very poor; apricots, raspberries, equal to last year, good crop; currants, good crop; loganberries, 50% in excess of last year; potatoes, 4% less than last year; onions, 50% less than 1920.

Ontario, July 15.—Department of Agriculture reports fall wheat and rye nearly average yield; spring grains are being forced by great heat prevailing for weeks and are unlikely to head out well. Straw short. Weather excellent for corn but more rain required. Roots crops fair; potatoes fair; apples and pears medium in yield but peaches and grapes promising better and will be about two weeks early on account warm weather.

Quebec, July 14th.—Minister of Agriculture reports prospects not bright owing lack of moisture, Hay crop 50% less than last year; cereals little straw and short crop of grain; potatoes limited. Recent rains have improved conditions. Apples and fruit excellent.

New Brunswick, July 18th.—Provincial Department of Agriculture reports that all garden and field crops have suffered from prolonged drought but are showing much improvement since recent rain. Conditions now more encouraging than any time this season. Hay crop 75% of normal.

Nova Scotia, July 15th.—Department of Agriculture reports drought all parts excepting south shore. Reduced hay crop yield cannot exceed 75% of last year. All other crops promising. Rain falling heavily. Apples promise same yield as last year. Annapolis Valley advises exceptionally dry weather until today's rain. Strawberries short; hay short; apples and potatoes promise heavy yield.

Livestock.—The livestock market has been a bit "draggy" recently with a tendency downwards in prices owing to the long continued spell of dry weather which has driven every one who could go, to the country and thus lessened the consumption of meat. The cooler weather during this week end however has changed this and the market is strong with plenty of sellers and buyers. Although the ban upon the importation of cattle into Great Britain has not yet been removed, the exportation of cattle from the Port of Montreal is showing an activity that has not been seen for many years. Since the opening of navigation this year, there have been shipped 7,574 cattle and 1884 sheep.

Fifty Years Agricultural Production

The vast fertile plains of Canada, the world's largest potential grain producing area, has predestined the Dominion to a future of the greatest agricultural prosperity and agriculture has never ceased to maintain a substantial lead over other activities of the land. Despite the priority of establishment secured by the fur trade, the rapidity of increase in manufacturing, the greater exploitation of forest and mine, agriculture by her giant strides of progress has kept well in the lead. For after all, with agriculture the fundamental of national development the progress of other phases are reflections of the movement of the prime industry. And still there are millions

of fertile acres to be settled upon, which ensures for the agricultural industry, for at least many years to come, the premier place among national activities.

The progress of Canadian agriculture since Confederation makes an astounding record, and in the steady and substantial strides taken may be obtained a foresight of the status of this industry in Canada in the years to come. From 1870, three years after Confederation, when the first Dominion census was taken, until 1920, the value of Canada's field crops has increased fourteen fold. Surely a notable achievement, indicative of the extensive settlement which has taken place and the growth of the area rendered productive.

Though one is prone to record Canadian development from the period when the provinces were confederated into an United Canada, the land had a notable history before that time in many activities of national importance and agriculture, carried on on no mean scale, was the leading source of revenue. In the year 1870 for instance its field crops were worth \$111,116,606. The progress since that time in ten year periods is pithily summed up in the following table:

1870	1880	1890
\$111,116,606	\$155,277,421	\$194,766,934
1900	1910	1920
\$237,766,934	\$507,185,500	\$1,445,244,000

The basic reason for this increased value of production is naturally the extensive settlement which has taken place in this fifty year period, though during the war period crop revenue was considerably augmented by the prices beyond normal which prevailed at that time. The settlement of the Western provinces and the consequent cultivation and production has been the most instrumental factor in the period in swelling Dominion crop values. By the filing on thousands of government homesteads, by the extensive purchasing of raw lands, millions of additional acres have been rendered productive and been responsible for the yearly increment of national revenue. The progress of Western crop production is illustrated in the following table of yearly field crop values for the four provinces Alberta, Saskatchewan, Manitoba and British Columbia:

1880	1890	1900
\$4,761,339	\$27,129,268	\$36,674,399
1910	1920	
\$105,926,400	\$636,501,900	

For four years now Canada has exceeded one billion dollars in the annual value of her crops, with increases each year which in 1920 brought the total value to nearly one billion

and a half. The increased acreage of 1921 will add further to the year's crop value. Even the most casual study of Canadian affairs gives indisputable evidence of unprecedented progress for Canadian agriculture in the immediate future which will in all probability create a more remarkable record than that of the last fifty years. But granted only the same measure of progress for the Dominion's first industry, in fifty years from now the value of her field crops would be worth more than twenty billion dollars at the low prices which prevailed in the fall of 1920, or about four billions more than the annual value of the field crops of the United States at the present time.

Soldiers' Farming Record

On May 1st of this year the legislation reserving for soldier entry all government lands within fifteen miles of a railroad was rescinded and soldier and civilian given equality in filing on Dominion reserves. To all intents and purposes this act signalled the writing of finis to Canada's work for her ex-warriors in rehabilitating them by way of the farm, and signified that all her soldiers who had desired to avail themselves of the privileges an appreciative country had accorded them in assisting them onto the land, had done so. And so the last annual report of the Soldiers' Settlement Board may largely be considered in the way of a comprehensive survey of the work Canada has done for her men of the Expeditionary Force and nothing but minute variations in figures and statistics in subsequent reports be expected.

The Board was organized in 1917 to assist eligible and qualified returned soldiers to settle upon the land. Loans were authorized for the purchase of livestock and equipment and for erections and improvements. Later the scope of the Act was extended to enable the Board to purchase for returned men agricultural lands in any province. The benefits of the Act applied not only to men of the Canadian Expeditionary Force but also to ex-members of any of the Imperial, Dominion or allied forces who resided in Canada prior to the war and to Imperial and Overseas Dominion forces who saw service out of their own country.

Over 40,000 Granted Certificates.

Loans were granted to men, duly qualified to take a farm and engage in agriculture, to the extent of \$7,500 at five per cent interest repayable in six annual instalments in the case of loans for stock and equipment and in twenty-five annual instalments in the case of land and buildings. Since the commencement of operations 59,331 returned soldiers have

made applications to the Board for certificates of qualification. Of this total 43,063 have been granted certificates and at the present time 651 are gaining further practical farming experience before being considered as qualified. A number are still in abeyance and others disqualified or recommended for practical training.

The following table shows the number of men settled on the land and the total amount of loans approved by provinces:

	No. of Loans	Amount
British Columbia	2880	\$12,798,827
Alberta	5785	23,048,972
Saskatchewan	4,927	19,425,238
Manitoba	3231	13,445,460
Ontario	1442	6,337,362
Quebec	341	1,774,991
New Brunswick	491	1,504,135
Nova Scotia	361	1,200,576
Prince E. Island	313	866,186
	19,771	\$80,371,747

Whilst lands fifteen miles on each side of a railway were reserved for soldier filing, 8,772 men took advantage of the reservation and occupied free lands. Of these 3,100 received from the Board financial assistance to purchase livestock and farm implements and to erect buildings. The total, therefore, of men who have gone on the land under the ægis of the Board is 25,443, including 19,771 who have received financial assistance.

In the three prairie provinces where Dominion lands were available, every eligible returned soldier was entitled under the Act to a soldier grant of 160 acres in addition to his civilian right to homestead another 160 acres. The average soldier grant and homestead taken up is 240 acres, making a total area of free lands disposed of, of more than 2,000,000 acres. The total area of land occupied by soldier settlers under the Act is 4,854,759 acres made up of purchased land, 2,153,184 acres; encumbered land 360,227 acres; and soldier grants, 1,361,280 acres.

98% Quality—200,000 Acres.

The progress made by Canada's soldiers turned farmers is gratifying in the extreme, as high as ninety-eight per cent having made good according to inspectors of the Board. In the year 1920 soldier settlers broke 194,253 acres of new land and it is expected that during 1921 an area aggregating half a million acres will be brought under cultivation. Last season's crop returns received by the Board show that a total of \$13,953,178 worth of main crops was produced by soldier settlers, these

men having added to Canada's annual production more than two and a half million bushels of wheat, six and a half million bushels of oats and more than three hundred thousand tons of hay.

The rehabilitation of Canada's army which was both rapid and tranquil has aroused universal admiration. This is a record of how part of it was accomplished, how men who found that after the campaign they could not tolerate indoor life sought their reestablishment in the out of doors and wielding the plough in the same spirit they had the sword, achieved the victory of peace as they had that of war.

Dairying Increasing in Canada

Canadian agriculture has achieved a wide renown in a great diversity of products, the latitude being as broad, in fact, as the lines of agriculture followed limited only by situation and climate. Famous, agriculturally, in the first instance for her giant ranches which sent their big fat cattle all over the world, she turned as successfully to grain raising when the farmer invaded the rancher's domain, and in competition with the continent's first agriculturalists carried off the premier honors. Later when the adaptability of certain areas to mixed farming was proved, and the general advisability of this method of farming accepted, the excellent standard of her purebred stock brought a demand from many foreign countries for animals to restock their herds. In the export of fruit and other products Canada is each year penetrating new markets, and would now seem to be making a bid for fame as a dairying country with the strongest evidence in the way of a yearly increasing output whilst maintaining a quality which keeps the product in general demand.

The Dominion achieved a new record in dairy production in 1920 with an output valued at \$144,483,188 which was nine million dollars in excess of the previous year's production. Creamery butter in that year with an output of 110,030,399 pounds showed an increase of 6,139,692 over the figures for 1919 with an average price secured of 56½ cents per pound as against 54 cents. Cheese made in factories during the year aggregated 149,521,008 pounds, a decrease of 16,000,000 from the previous year which makes the increase on the total dairy products all the more remarkable and pleasing. In addition to these two products condenseries turned out 53,980,993 pounds of condensed milk; 30,369,642 pounds of evaporated milk, and 7,574,668 pounds of milk powder. The total value of all dairy products as previously stated was \$144,483,188.

West Features in Production.

The production of creamery butter which has been so favorably received on a wide market and of which more than ten million dollars worth was exported in 1921, is aided in a varying extent by all the provinces of the Dominion, it being an important factor in agricultural revenue in each. In the year under review the province of Quebec led with a production of 40,037,692 pounds valued at \$22,352,146. Ontario followed with 37,148,898 pounds valued at \$21,245,664. These two provinces maintain a wide lead over the rest of Canada, Alberta being next in line with a value of more than \$6,500,000. Manitoba accounted for over \$4,000,000 in this item of production; Saskatchewan \$3,700,000; Nova Scotia \$1,518,757; Prince Edward Island \$674,000 and New Brunswick \$607,000.

Ontario led easily in the production of factory cheese with 92,847,769 pounds valued at \$24,615,290. This is both a greater output and value for the province than in creamery butter, the only instance to be found among the provinces. Quebec followed in production with a value of \$13,356,475. The little province of Prince Edward Island followed with \$525,635; Alberta \$110,355; New Brunswick \$329,782; and British Columbia \$96,134.

The rapid manner in which the production of creamery products is increasing in Canada is indicated in a concise manner by a comparison with the figures of ten and twenty years ago. In 1900 the production of creamery butter was 36,066,739 pounds valued at \$7,240,972. By 1910 it had nearly doubled with a production of 64,698,165 pounds valued at \$15,645,845. By 1920 it had almost redoubled again with 110,030,399 pounds worth \$62,306,794, quadrupling in value. A large factor in maintaining this consistent increase has been the enthusiastic entry of the Western provinces into the industry and the past few years have seen the most remarkable development of dairying on the prairies.

West's Remarkable Development.

To cite the instance of one province only, In 1920 Saskatchewan secured an increase of more than 40,000 pounds of creamery butter over her previous year's record accounting for an increase of more than half a million dollars in revenue from this source. Taking the four western provinces together, in the last five years they have doubled their total creamery butter production the comparative amounts being 14,077,743 in 1915 and 28,120,940 in 1920. The value in this five year period has nearly quadrupled, the respective figures being \$4,091,874 and \$15,908,592. Dairying on the prairie is progressing at a startling rate. Man-

itoba in five years has increased her annual production of creamery butter from five million pounds to seven millions, Saskatchewan from three millions to six millions, and Alberta the astounding increment of eight million pounds, or from three millions to eleven.

Canada in the past twenty years has made remarkable progress in the production of creamery products and the proportionately greater attention devoted to the industry in the past few years augurs yet greater triumphs for Canada's dairy herds with a maintenance of the same high standard of production. Indications of her prominence in this industry, excellent forecasts of her greater future are many. Already the dairy herds of Canada are being drawn upon to improve the stock of older countries. In 1920 after securing practically all the Canadian prizes in the same class, a Saskatchewan butter-maker carried away the second prize for creamery butter at the National Dairy Show, Chicago. To cap this a new world's record for milk and butter production has been set by Bella Pontiac, an Ontario Holstein Friesian cow owned by T. A. Barren, of Brantford, who in a year under test ending in June last produced 27,017 pounds of milk, 1,259 pounds of fat, and 1,594 pounds of butter. Is anything further needed to give Canada a prominent place among the dairy nations of the world?

Industrial Quebec

Though as an industrial province Quebec must take second place to Ontario in point of capitalization and output, Canadian industry had its birth in what is now the French-Canadian province and though subsequently outstripped by its adjoining sister, it has made and continues to make marked and consistent progress. The output of Quebec's manufactures in 1919-1920 was \$890,420,023 compared with \$158,287,994 in 1900, a notable growth in less than twenty years. Quebec has all the necessary qualifications for industrial growth, wealth of waterpowers and natural resources, an excellent shipboard and ports, fine railway facilities and waterways, and a class of artisans and workers to which tribute is paid from all sections of the American continent.

Canadian industry was born of Quebec's settlement and consequent necessity. The thrifty mothers of Canada to provide clothing for their children laid the foundation of the textile industry with the spinning wheel and hand loom in the seventeenth century. Hat and shoe factories were established in Quebec prior to the year 1668, and records of the year

1681 show the existence at that time of four weavers of cloth, one of carpets, one ribbon weaver, four ropemakers, six hatters and one carder. The first timber manufactured in Canada was shipped from Quebec province, and the first Canadian brewery was established in Quebec city.

Mining for iron ore commenced upon the banks of the St. Maurice River in 1733 and by 1737, smelting operations had been entered upon on a large scale. The first sugar refinery was established in Montreal in 1854 and the first flour mill in 1860. In 1851 the province boasted 541 grist mills, 1065 sawmills, 193 carding machines, 18 woolen mills, 13 breweries, 7 distilleries, 12 shipyards, 38 foundries, 204 tanneries, and 123 industrial establishments.

Industry was firmly established in Quebec province before Confederation and progress since that time is best illustrated in a comparison of the various census since conducted.

	1871	1881	1891
Industrial establishments.	14,079	15,673	23,037
Capital	\$28,000,000	\$59,000,000	\$118,000,000
No. of Employees	66,714	85,673	117,389
Production	\$77,205,182	\$104,672,258	\$153,255,583
	1900	1915	1918
Industrial establishments. (not clsfd)	(not clsfd)	(not clsfd)	(not clsfd)
Capital	\$142,403,407	\$548,972,575	\$860,468,768
No. of Employees	125,684	148,329	207,513
Production	\$158,287,994	\$387,900,585	\$920,621,171

Quebec's forests are responsible for the greatest amount of industrial activity. Pulp and paper is the leading industry which in the past has witnessed a phenomenal development and is still undergoing a steady expansion. Pulp products increased in value from \$2,421,068 in 1900 to \$33,637,775 in 1920, and paper from \$2,021,592 to \$41,601,790 in the same period. Forest products employ 20,000 men and have a production value of \$40,761,730, having jumped to this figure from \$18,609,716 in 1900.

The manufacture of butter and cheese constitutes an important industry and in 1920, 40,037,692 pounds of butter having a value of \$22,352,146 and cheese to the value of \$13,356,475, were manufactured.

In the value of manufactured cottons, Quebec leads the Dominion with twelve textile plants having a capital of \$37,962,311 out of a total for the Dominion invested in this industry of \$58,732,941. These plants produced in 1919 goods to the value of \$57,530,438 out of a total for Canada of \$82,642,949. Quebec operates 83 of the 147 factories in Canada employed in the manufacture of men's clothing and they represent a capital of \$14,180,989 out

of a total investment in the industry of \$25,703,795.

A Wide Range of Manufacture

Twenty plants for the manufacture of agricultural implements have the sum of \$3,892,851 invested in them. Two of the eight sugar refineries in Canada are in Quebec having an investment of \$5,869,592. There are 71 hat, cap and fur manufactories with a capital investment of \$7,585,382 and twelve woolen textile mills with a capital of \$3,126,141. A total of \$3,315,328 is invested in 18 glove and mitt factories.

A very prominent Quebec industry is the manufacture of boots and shoes and out of a total production of \$63,319,128 in the Dominion, Quebec is responsible for \$41,689,124 from 91 establishments capitalized at \$24,894,251.

Though there are nearly 500 mills for the manufacture of flour in the province these are mainly of small capacity with about twelve and a half million dollars invested. About ten million dollars is invested in 15 abattoirs and meat packing establishments. Men's furnishings are responsible for 31 factories and ship-building for nine yards.

The principal industrial centres of the province in order are Montreal, Quebec, Sherbrooke, Three Rivers, Hull and Lachine, which have in the main been responsible for the remarkable progress which in the past ten years have elevated production figures from \$158,287,994 to \$890,420,023.

Industry has become a serious rival to agriculture in the province but the two are amicable competitors progressing hand in hand and mutually aiding. Quebec has now attained the position where she can not only provide most home needs but engage extensively in the export of these products. Her expansion in the past decade is a fair indication of the development of the next.

Outlook in Western Canada

By John Sweeting, Industrial Agent, Western Lines C.P.R., Winnipeg.

Conditions during the past month tend to a prospective bettering of trade conditions in Western Canada, though at some points, more especially country points, dullness still exists, yet, there is undoubtedly sign of improvement generally.

Crop conditions are still showing good promise, the rains in the early part of July putting an end to a somewhat lengthy dry period, which did some damage over an area, that taking the three Prairie Provinces as a whole, was comparatively small. At the time of writing a good crop appears to be probable and

in some districts the yield will be heavier than it has been for some years past.

Industrially there has been practically no change of note. Investigations of natural resources are being carried on with a view to securing data of value for future development when capital is ready to enter the western field and much valuable information is being collected as to the potential wealth existing in the Prairie Provinces. A shipment of bituminous sands (commonly known as tar sands) has been made from the Fort McMurray territory to Great Britain for testing purposes — while a market for Alberta horses is being investigated in the West Indies. A shipment is being made to Trinidad to determine possibilities in this connection.

Industrial Attraction to West.

Shipments of Alberta cattle to Great Britain are arriving in good condition and the animals are appreciated by the old country market. While the present time may not appear conducive to any very outstanding experience in new business, it is regarded in the West as a period when preparation should be made to take care of the time when it is believed that, in the not very distant future, the industries and resources of the West will command much attention.

In the Grand Prairie and Peace River district crops are reported to be in fine condition, promising heavy yields. Traffic, both passenger and freight, to the north is heavy and several companies of note are taking in oil drilling outfits to various districts to carry out exploration work; while in Central and Southern Alberta progress in drilling is being steadily carried out. From Saskatchewan shipments of Glauber salts are being made to eastern points, as is also the case in respect to sodium chloride which is now finding a Western market.

It can be stated that a good deal of interest in Western natural products is evident and it appears fair to assume that prospects are satisfactory in trend and that we may look with confidence to steady expansion and improvement in conditions.

Field for Canadian Trade

That Denmark offers a most promising field for Canadian trade if Canada will only "get after" it actively, is indicated in an official letter received by this Bureau. The report which is dated June 4th says in part:—

"I have previously referred to the excellent market which the United States is finding here for a great many of its products. Now that the Danes have adopted Western taste and

fashions, it should not be difficult for Canadian manufacturers to find a market here.

"In the shoe trade, for instance, the American shoe is the dominating one; through the U. S. also come great quantities of Pacific salmon and canned fruits; canned meats may be seen in every grocery store as well as flour, sacks of rolled oats in bulk and corn flakes, grape nuts, Quaker Oats, etc., in packages. In addition American washing machines, safety razors, "Eversharp" pencils, toothbrushes, paste and powder, shaving sticks and other toilet articles are in daily use."

Canada's exports to Denmark have both risen and fallen considerably during the past three years. In 1919 their value was but slightly over \$42,000; in 1920 they jumped to nearly \$3,000,000 only to drop to \$500,000 last year. No explanation is given in the Government Trade Reports regarding the heavy export drop last year.

180 Persons to the Square Mile

Denmark's population in 1916 approximated 3,000,000—180 persons to the square mile—an increase of 1.16 per cent over the 1911 census. Her area in 1916 was 15,582 square miles, 80% being productive with about 1-6th of the unproductive area in peat bogs. Her soil is greatly subdivided owing to the law which interdicts the union of small farms into great estates and encourages in various ways the parcelling out of landed property, leaving the tenant entire control of his land so long as the rent is regularly paid. As is well known, her livestock are famous the world over; the 1919 census gave her 558,571 horses; 2,188,142 head of cattle, 509,466 sheep, 715,909 swine and over 12,000,000 hens. Her exports of home products during the years 1917, 1918 and 1919 were:—\$327,500,000; \$192,500,000 and \$205,000,000."

Our correspondent in conclusion points out that as Canada produces practically all the commodities now supplied by the United States, it only requires Canadian trade activity to find a market ready and willing to her hand.

Canada's Trade Commissioner to Denmark and Holland is Mr. George E. Shortt, Zuidblaak 26, Rotterdam,, cable address Watermill.

Pulp and Paper Industry

Canada has many attractions for other lands at the present time indications of which are not far to seek, but judged in round figures her greatest lies in her resources of pulpwood. More and more have the depleted forest resources of other nations driven them to Canada for supplies of the raw material for their paper mills that exports have experienced the most

phenomenal of elevations and the development of the various phases of the industry raised its status to that of the second industry of the Dominion, taking only a lower place than agriculture.

Though it is only of recent years, since the destruction of forests that were never regrown, and the consequent searching farther afield for other resources, that the industry has grown to be of such national importance to Canada it is an old one in the Dominion and manufacturing was active at the beginning of the last century. Paper, according to tradition, was first made in Canada in 1803. In 1825 a Mr. Crooks won a prize of £100 given by the government of Upper Canada for the first sheet of paper made in that realm. In 1840 the Taylor Brothers built a mill near Toronto and later two others, one of which still exists as the Don Valley Paper Mills. In 1866 a mill employing sixty persons was established at Windsor Mills, Quebec, which is now the Canada Paper Company.

By 1881 Canada had five paper mills, capitalized at \$92,000, employing 68 people and having an output of \$63,000 annually. In 1901 there were 25 mills with a capital investment of \$11,500,000 employing 5,300 people and with an output of \$4,246,000.

\$265,000,000 Invested

The progress of the past twenty years in this industry has possibly been the most phenomenal phase of Canadian development unless we except agriculture and the amount invested in the industry and the value of the annual output of two decades ago appear quite insignificant in comparison with the moneys these represent now. At the end of 1919 when the last survey was conducted by the Dominion Bureau of Statistics a total of \$264,581,300 was invested in the industry, \$69,896,588 being in pulp mills, \$16,553,276 in paper mills, and \$178,131,436 in pulp and paper mills. In all there were 99 mills, 33 paper, 39 pulp, and 27 pulp and paper. Of these 46 were located in Quebec, 38 in Ontario, 5 in British Columbia, 5 in New Brunswick, and 5 in Nova Scotia.

The industry gives employment to a total of 26,765 people who draw wages and salaries amounting to \$32,323,789. Wood pulp production in that year amounted to \$48,562,088 and paper production to \$91,362,913.

A mere modicum of the manufactured products of Canadian pulp and paper mills is absorbed by the domestic market, by far the greater part being exported, the Dominion's largest customer being the United States. This export trade in pulp and paper has been the most remarkable feature of Canadian trade in the past few years the increases being of a wood, wood products and paper amounted to

less than fifty million dollars. By 1917 they had increased to nearly eighty millions. Between 1917 and 1919 they nearly doubled, amounting in the latter year to \$154,500,000. In 1920 the total exports amounted to \$213,913,944 and in 1921 to \$284,561,478, or nearly six times what they were in 1913.

U.S. Canada's First Customer

The United States is Canada's first customer in this regard, her purchases being overwhelmingly greater than other countries combined. In the year 1920 her imports of paper and pulpwood from Canada amounted to \$58,822,142. In the same year \$4,813,577 worth of paper was exported to the United Kingdom, \$2,963,871 worth to Australia, to the extent of \$1,184,629 to New Zealand, to \$1,253,871 to South Africa and \$872,932 to Japan, all of countries are drawing upon Canada for their paper and raw materials for its manufacture to an increasing extent each year.

The enormous and widespread demands for the products of Canada's forests is taxing their capacity almost to the uttermost and only a wise foresight and rigid methods of conservation on the parts of both governments and the companies engaged in exploitation can maintain them in fruition. Already pulp and paper companies have been forced from East to West and the industry on the Pacific Coast is showing, if anything, more active development.

The untouched pulpwood supplies of the Prairie Provinces are also attracting attention, and with domestic consumption increasing and the export trade jumping by leaps and bounds, Canada may expect this industry to further expand to its natural limit dependent upon systematic replanting and conservation.

Canada's Automobile Industry

Holding the second place among all the countries of the world in per capita possession of automobiles, with approximately one car to every eighteen of population, it is but natural that the automobile manufacturing industry should have attained important proportions in Canada. According to the returns of the Dominion Bureau of Statistics the capital invested in the industry at the end of 1919 was approximately \$57,000,000. Of the 1,289 plants in which this capital was invested, 1,236 made repairs, 42 produced accessories, whilst 11 engaged in the manufacture of automobiles. Ontario led in the number of plants with 639; Quebec 165; Saskatchewan 136; Alberta 98; Manitoba 84; British Columbia 84; Nova Scotia 49; New Brunswick 34; and Prince Edward Island 2.

Ontario was in 1919, the only province manufacturing automobiles the capital invest-

ment being \$48,801,000 of which about \$35,000,000 was in manufacturing plants. Just how far Ontario has monopolized the industry is seen from the fact that the investment in all other provinces amounts to no more than \$8,000,000. That of Saskatchewan came next with \$1,813,002.

The number of employees engaged in the industry was 12,139 of whom more than one half were employed in automobile plants. In the year under review they were paid in wages and salaries the sum of \$15,389,000. The materials used in Canadian plants were valued at \$61,279,000, no less than \$51,690,715 having been in the manufacture of automobiles. The selling value of the products at the works was \$101,196,000 and the number of cars turned out being somewhat over 68,000, there being 21,000 other machines produced.

Export Trade Rapidly Growing.

In the export of automobiles and their parts, Canada is doing a large and growing trade. Whereas in 1915 these exports were valued at only \$3,054,000 by 1916 they had grown to \$9,431,000; and in the year ending March 31st, 1921, the surprising increase to \$19,628,000 had been made. Australia and New Zealand are the best markets Canada has for cars, whilst the United Kingdom, India, South Africa and the Dutch East Indies also take a goodly number. The United States absorbs a considerable quantity of parts the value of these during the fiscal year 1919-20 amounting in value to \$282,000. Altogether 21,128 cars were exported in the fiscal year ending March 1921 as compared with 12,750 in the previous year. The large increase in exports in the past fiscal year is to an extent explained by the coming into effect of the British preferential tariff at the end of 1919 which grants a preference of one-third provided that not less than twenty-five per cent of the labor on the finished car shall have been done within the British Empire.

Windsor Great Manufacturing Centre.

The Ontario automobile sector, a throbbing hive of industrial activity, which is responsible for practically the entire output, centres in Windsor and its surrounding communities of Walkerville, Ford City, Oshawa, and Toronto, whilst London, Chatham, Kitchener, Hamilton and Brockville are also heavily interested in the manufacture. Amongst the cars manufactured are the Ford, Maxwell, Studebaker, McLaughlin, Chevrolet, Oldsmobile, Willys-Overland and the Gray-Dort.

The automobile industry in Canada is an expanding one and one which must of necessity grow to meet the increased demands of the domestic and export markets. Just how the

former is extending can be realized from the fact that in whilst in Canada in 1919 there was a car to every twenty-five persons there was one to each eighteen in 1920. The increasing favor which Canada's automobile products are regarded in foreign countries is marked. Canadian firms engaged in manufacture are continually being added to by new incorporations and the establishment of United States and British houses. At the time of writing arrangements are said to be completed for the formation of an automobile manufacturing company with a capital of ten million dollars to be established by United States interests at Montreal.

Fur Farming Industry

Fur farming is one of the most recent of Canadian industries but one which has developed rapidly and assumed proportions of national importance in a short space of time. An investigation conducted in 1912 revealed numerous were being held in captivity for their fur. Foxes of two species and of all color varieties skunk, mink, racoon, fisher, beaver, muskrat, marten and otter were found upon farms domesticated for their pelts. Since this time the activities have developed into a staple industry. Originating and spreading widely in the Maritime Provinces it has quickly come to embrace in its scope all of the provinces of the Dominion.

In 1919 the status of the industry was considered to be of such proportions as to warrant government survey which was accordingly carried out by the Dominion Bureau of Statistics. It was discovered that fur farming was worth to the Dominion a total of \$3,968,591 that year, there being altogether 414 fox farms in operation including 249 in Prince Edward Island, 48 in Nova Scotia, 21 in New Brunswick, 52 in Quebec, 10 in Ontario, 1 in Manitoba, 1 in Saskatchewan, 11 in Alberta, 8 in British Columbia, and 13 in the Yukon as well as 3 mink farms in Nova Scotia and 2 racoon farms in Quebec. There were 6,433 foxes on these farms worth \$3,013,115 and during the year under review 2,028 silver fox pelts to the value of \$482,364 were sold.

The high prices for furs which have prevailed during recent years explain why fur farming has made such rapid progress in such a short span. An analysis of the reasons of this rising cost will explain why encouragement is given to extending domestic farming establishments at the present time and why it will remain a profitable industry to the farmer with prices maintaining a high level beyond temporary market fluctuations.

Many Factors Encourage Industry.

In general terms furs have been high because they were scarce; they have become scarce because less is produced and more is used than ever before. In a growing population with the wealthy classes increasing commerce and efficient salesmanship have introduced them to all parts of the globe, whilst the ubiquitous automobile encouraging the outdoor life has been a pronounced factor in the increased consumption of furs. On the other hand the wilds are disappearing. The continual trend of settlement northward penetrating the woods and tundras has driven the wild creatures into their last retreat. The use of modern guns, smokeless powder, improved traps and bait have all been factors in exterminating certain animals and seriously depleting the numbers of others. For years they have been diminishing in numbers and this process will continue indefinitely.

The only measure to cope with problem of decreasing supply and increasing demand is the encouragement of the domestication of fur bearing animals. Not only can sufficient be raised to furnish the large market previously supplied by the wild product but a much higher grade of fur can be developed and marketed. Under the care of skilled husbandmen the animals raised on fox farms can be brought up to the highest pitch of condition and the farmer has the advantage of the trapper in as much as he can kill the animal at that stage when the pelt is richest and glossiest thus being sure of the highest market price.

Canada undoubtedly offers the widest and most profitable field at the present day for engaging in the domestic rearing of fur-bearing animals. The last resort on the continent of the wild furbearers, it offers the finest of conditions for following the cult both physically and economically, breeding them in what closest approximates their natural habitat. Not only does Canada raise the best of wild pelts but climate, food, environment and general conditions bring to a richness and glossiness unequalled elsewhere the pelts produced domestically.

Across Canada—Edmonton

Probably no city has for years been so intently and steadfastly the focus of the world's gaze as the city of Edmonton, the capital of the province of Alberta is at the present time. After existing for years as an important fur centre it attained a more exalted position when selected as the seat of the Alberta provincial government. The penetration and opening up of the vast fertile agricultural tracts of the Peace River country added greatly to its

national and world importance but it has suddenly acquired a new and much enhanced prominence as the world's gateway to the newly discovered oil field of the Mackenzie river basin. Edmonton, taken apart from its assured eminence as the capital of a rich province rapidly developing in all phases, has had to await the settlement of the enormous agricultural area to the south of it before it could vision that vaster greatness ahead which its choice situation and many advantages justify and which the recent discovery of oil in the Northland promises to expedite.

Edmonton, often termed the most handsomely situated city in the Prairie Provinces—perched as it is high on the banks of the Saskatchewan River—had its origin in 1795 when a post was established there by the Hudson's Bay Company and it became the collecting centre for furs of the Northland, a trade in which it has never lost its prestige despite the fact that other businesses of the rapidly developing area of which it is the centre have outstripped it in importance.

A city of about 68,000 people with corporate limits comprising an area six miles by seven, Edmonton is a handsome city in a fair, timbered, park-like country, the centre of a rich agricultural area and tributaries of a varied natural wealth. Farm products of all kinds, coal, timber, furs (and in future oil) come to the city for distribution to all parts of the world. Its legislative buildings make a collection of exceptional beauty, and it possesses many other public utilities and business houses of imposing aspect. Educationally, it is a provincial centre being the seat of the University of Alberta and possessing a seminary, convents, high school, technical school and thirty-three public schools. There are over forty churches and twenty-two banks.

Centre of a Network of Railways.

A glance at the map will indicate how excellently Edmonton is provided with transportation facilities, her arms radiating in all directions to serve and be served. The city is a veritable spider's web of railways, two trans-continental lines entering it in addition to the overland stretches of the Canadian Pacific Railway. Penetrating into the great Northland are the Edmonton, Dunvegan and British Columbia Railway serving the Peace River, Grande Prairie and Spirit River districts and the Alberta and Great Waterways Railway terminating at Fort McMurray both at the present time, the jumping-off places for the oil fields. Supplementary to these is an excellent system of waterways furnishing transportation to within reasonable distance of the city.

Industrially Edmonton has made rapid strides in the last decade and now has a wide variety of manufactures supplying most of the needs of the large territory it serves. It is ideally situated for industrial expansion being surrounded by a great wealth of coal and having already twenty-two coal mines in and about the city. It is no speculative matter to estimate to what industrial heights Edmonton will reach in keeping pace with the Northland's certain and rapid development.

Edmonton is already an important centre considered from the standpoint of the province or the Dominion. The trade of all that region east of the Rocky Mountains to the Saskatchewan boundary, and north to the Arctic is done by or through the city. Substantial as trade already is, the enormous resources of the Northland are as yet largely unknown and unexplored. Each month reveals new hidden wonders in this great land. Edmonton, to arrive at the full status her situation and facilities deserve, has been awaiting the more adequate development of the Last West of the Peace River and MacKenzie basin. The promise of this now assured, sensational progress may be expected of the Alberta capital.

Canada's National Parks

The act providing for the establishment of Dominion parks gives as the reason of their creation "to be maintained and made use of as public parks and pleasure grounds for the benefits and advantages and enjoyment of the people of Canada". The crowd of tourists from other lands, however, which reach them in ever increasing numbers each year by train and automobile, indicates a utilization and appreciation much wider than in the conception of the originators of the scheme and their annual presence is a glowing tribute to the wonders and beauties of Canadian scenery.

The Canadian National Parks, where primitive nature harmoniously blends with the modern comfort and luxury of civilization, have become the playgrounds of a continent and will without doubt remain so, an eloquent acknowledgment to a nation's forethought in preserving these areas as sanctuaries for birds and beasts and havens of rest and holiday for man.

A striking illustration of the popularity of the Canadian Rockies was given last summer when, under the auspices of the Brooklyn Eagle, a party made a park to park tour through many United States parks including the Canadian Rocky Mountains Park. At the conclusion of the tour a vote was taken as to the respective merits of the various parks and

hotels visited with the result that out of eighty-six votes, Banff and Lake Louise on the Canadian Pacific Railway, received first place with twenty-four, and among the hotels, Banff Springs led with twenty-one.

National parks situated all over the Dominion comprise a total area of 8,948 square miles. They are the properties of the people of Canada, a region where they are free to make holiday in the realization that their playground is their own, a haven where the wild things of the forests soon learn they are secure from the molestation of trap and gun, and can live in peaceful harmony with man.

The Rocky Mountain Park.

The most extensive and grandly picturesque of these parks are situated in the extreme west featuring the rugged grandeur of the Rocky Mountains. Here Nature reigns supreme, the veriest tinge of civilization touching her domain. The Rocky Mountains park which takes in parts of the provinces of Alberta and British Columbia has an area of 2,791 square miles and incorporates such spots of international renown as Banff and Lake Louise. Jasper Park, in the wild ruggedness of the more Northerly Rockies, is the largest of all the Canadian parks with 4,400 square miles of area. Other parks of the west, closely adhering to their primitive state and unchanged in the wild charm of their surroundings, are Yoho 560 square miles, Glacier Park 468 square miles, Watertown Lake Park 423 square miles, and Buffalo Park 159 square miles.

In Saskatchewan the Antelope Reserve near Maple Creek has been reserved as a park and contains twenty square miles. In the province of Ontario twelve islands in the St. Lawrence of 140 acres, have been preserved to the nation from industrial or agricultural desecration and Pt. Pelee, with 3,869 acres, is maintained in perpetuity as a bird sanctuary. In the eastern provinces the national parks have a more historic flavor as Fort Howe, historic park at St. John in New Brunswick, and Fort Anne, historic park at Annapolis Royal in Nova Scotia. British Columbia on the Pacific Coast has reserved to its people two provincial parks, one Strathcona Park on Vancouver Island containing 800 square miles and Mount Robson Park in the Tete Jeune Cache area of 650 square miles.

The National Forest Reserves.

In addition to these national playgrounds there are the national forest reserves which add considerably to Canada's holiday and camping grounds. Permanent settlement is not permitted on these grounds though leases may be secured for summer resorts, etc. The cutting of timber is permitted to allow the re-

moval of mature timber and enable that of lesser growth to attain full size in a shorter time than would otherwise take place, to conserve a full volume of water in the rivers and to guard against fire. Permits are granted for grazing on the reserves. These forest areas where wood may only be cut for the good of the forest, are each year the haunts of throngs of nature lovers. They are situated in Ontario and Quebec, accounting in the case of the former for a total of 20,038 square miles and the latter 174,065 square miles.

The full value of Canada's national parks may not yet be appreciated whilst so large a part of the Dominion still holds its pristine charms unblemished. But in the years to come when the rapidly growing Dominion has made greater onslaught upon Nature's work, the people of the continent will pay a well merited tribute to a nation's foresight in preserving these beauty spots from desecration and reserving a playground for them for all time

Canadian-Italian Farm Colony

Among many successful foreign farm colonies in Western Canada is that of the Italian Colony VENICE on the shores of historic Lake La Biche in Northern Alberta.

Italians are mostly thought of in this country as laborers and while to a large extent, this is true, there are nevertheless, particularly in Lombardy and Northern Italy, a hardy class of most excellent husbandmen. The history of the pioneering, endurance and perseverance of this Colony in establishing itself in Northern Alberta most emphatically bears this out.

The idea of establishing an Italian Agricultural Colony in Western Canada had long been cherished by a small group of Italians located in the Province of Alberta. With a view to locating on homestead lands in the North, these men born with an instinctive love for the land, foregathered by twos and threes from Eastern Canada and the United States, taking up such work as they could find until the propitious moment arrived for their venture. They had dreams of independence and happiness, a vision before them of creating in the land of their adoption, a bit of that far mother country which they had left in search of work and welfare.

Encouraged and headed by the Italian Consul at Edmonton, Signor Felice de Angelis, who secured from the Dominion Government the homestead lands referred to, twenty men pushed north in June 1914. As no railway then ran into the Lake La Biche District, the party proceeded by rail to Colinton on the Athabasca line, from which point their goal lay distant some seventy miles over an almost impossible, semi-obliterated trail. The task of

finding a good fertile stretch of land not too difficult to clear, not too far from railroad communication of the future and large enough on which to locate several hundred Italian farmers was not an easy one. Camp was laid at night wherever darkness found them from which point, in the early mornings, the settlers with but a compass as a guide, scouted in all directions. They were insufficiently equipped with tents and supplies while transport was limited to what each man could carry on his back.

Experienced Hardship and Hunger.

For two weeks they wandered without success and June was well advanced before they reached the shores of beautiful Massawaki Lake and pitched their camp on its shores. Signor de Angelis describes in his own picturesque language this occasion.

"We set out tents on the shores of picturesque Lake Massawaki framed by a tall and thick population of trees undisturbed by man and civilization, as pure and silent as the ages of pre-historic life. It was dusk when the camp was laid and for the first time, the echoes of the surrounding forest were awakened by the beautiful and melancholy Italian folk songs—those songs which in foreign countries are like the tears of love for the home beyond the seas."

On the following day, Mecca for them was in sight. Not a mile beyond the camp the first stretches of promising lands appeared. The long wished for site of the future settlement was reached and the dream of a wandering community and strong-willed men was materializing. It was the birth of the first Canadian-Italian Colony, consecrated by its historical association in the establishment of an Indian religious centre there about 1852 by Father Lacombe. Here "the Black Robed Voyager", like his Italian successors, had experienced both hardship and privation, lived without bread, milk, sugar, salt or tea, of which, writing in his diary, he said: "Conquered by Hunger, I learned to consume those vituals (the food of the Indians) without much repugnance for under the empire of this cruel stepmother, a world becomes savage".

The land chosen, being already surveyed, each member of the party proceeded to choose his own and friend's quarter-sections, and two weeks later they joyfully set out for Edmonton, bringing the good news to their waiting comrades. Four weeks later, the advance party of thirty-five returned to the camp. Seventy miles from the nearest railway station, without roads and with only two teams to transport supplies, with little means and few implements, they started their brave fight against

the wilds, often cut off from communication by rain and storm, hunting for their food and living on what the woods provided. Full of courage however, they began their first homes and before the snows of winter came, ten big log huts testified to their unflagging energy.

Persistent Effort Brings Success.

The development of the Colony since its inception has taken hard, persistent struggle. The long expected Alberta and Great Waterway Railway reached the Colony site the following year, and for the first time, writes the consul, "the train, bumping and rolling like a boat on the rolling sea, made its appearance through the woods bringing comfort and civilization". Many difficulties beset them. The Italian Government during the great war, called many of them to the colors. Most of them returned, however, bringing wives and children with them so that the population has now reached the 200 mark with an annual birth rate of 20. A school house, followed by a church has reared itself overnight; much land is under cultivation while herds of cattle pasture about. Crops and prosperity have begun to smile upon the pioneers. VENICE in Canada will some day attain a bigger record of Italian progress and success—an example and incentive to their fellow countrymen to emulate their splendid example.

Writes the Consul in conclusion. "The Italian Colony may be said to be yet in the first stages of its existence and judging from what has already been accomplished there is little doubt that in the near future it will attain the highest degree of prosperity and welfare. And there is no psychologist who can adequately describe the feeling of happiness of the good Italian farmer when at dusk, smoking his pipe, sitting on the doorstep of his own home, he can rest his eyes on the land, on his cattle leisurely grazing nearby, thinking of the crop he will put in next season or how he can improve his stock."

Women on the Land

Very noticeable since the conclusion of the war has been the attitude of women in general towards the land and in the desire so many of them evince to get back to the out o'doors life. The past two summers have witnessed the flocking of hundreds of women and girls to the farming districts and toil in the open air and this has been attended with the most gratifying success. The Canadian Department of Labor and other organizations interested in accommodating with employment those applying to them, are literally besieged by inquiries from women and girls who desire work on the farms, not in a domestic capacity, but in the open of the fields.

The great war brought to a sudden climax the changing status of woman in the cosmos. For years there had been a gradual evolution, almost imperceptible except in comparative retrospect, as

she forced her way into a nation's economic life and asserted herself as the equal of man in his every day affairs. The war, which demanded the limit in the utilization of her services, brought her endeavors to hasty fruition, gave her more than she had expected and drew in those standing hesitant upon the brink.

Woman took up practically every phase of man's work, and in the majority of cases carried it out as well as her brother. The entire womanhood of nations found itself occupied upon work which had never entered its conception and, what was more, for the main part, thoroughly enjoyed it. Woman performed the most laborious of tasks, including work in the fields, but the termination of hostilities inevitably relegated many of them to their old lives and environment. It was a hard matter to take up the old threads and little wonder that many of them, seeing their own land limited in opportunity, and overcrowded, looked across the seas to fresh green pastures awaiting the development of human hands and minds.

Since the signing of the Armistice, with the demobilization of the army, or more correctly since the availability of transport after the return of the Canadian troops, women from the British Isles and elsewhere have crowded the steamers arriving at Dominion ports. Many were war brides but the greater number consisted of those for whom war employment had gone with the return of the men from the front and who, finding themselves belonging to a class of two million superfluous women, decided to start out anew in a virgin field where their efforts were not only obviously needed but urgently sought.

A Feminine Hegira.

This movement continues unabated and every boat sees parties of fresh-cheeked English women arriving under government auspices to find homes in every part of the Dominion. Many of them belonged to various battalions of the women's army, many are experienced land workers, others followed pursuits purely feminine. Groups are bound for domestic service, others to fruit sections for light land work and still others, with limited capital, are taking up small pieces of land for themselves. Groups of women go straight from the boat to linen mills and other factories, being engaged in the old land and brought out by the management of these industries.

It is a burning question in older countries just what opportunities await women and girls in Canada. There is a widespread misconception that Canadian life is too hard and severe for girls reared in the calm atmosphere of the civic and urban centres of the old world, whilst it is pointed out that the government is encouraging only the immigration of girls willing to take up domestic service.

Whatever may have been true of a young woman's hardihood prior to the war is no longer so, and it has been proven that a girl can follow successfully most unskilled trades. In Canada there is the fundamental that the sexes are more nearly balanced which offers a more expansive field to woman.

No tribute too great or worthy can be paid to the pioneer wives and mothers of the Canadian agricultural regions, but as a general rule agriculture is carried out on too large and expensive a scale for woman to take any but a supplementary part. It is not uncommon to see a farmer's wife driving a binder at harvest whilst her husband is on an accompanying machine or stooking the grain as she cuts, but this is occasional and the wife of the modern farmer finds her time well occupied in her household duties, her poultry and her superintendence of the dairying.

Instances of Decided Success

There are to be found, however, a few instances in which women (in one case a former successful London journalist) make a decided success operating a grain or mixed farm. This however presupposes a good deal of capital to initiate the enterprise, and such cases are few. Notice might be taken here of the four ex-army nurses of Montreal who, evidently suffering from the disease of the returned soldier, thought to take advantage of the Soldiers' Settlement Act which permitted them to take soldier land grants for their services overseas and made the long trek to the Spirit River district of the Peace River Country. Here they have taken four quarter sections, in the middle of which a cabin has been erected, and have commenced their operations this spring with the utmost confidence of success. It must be stated, however, that such cases are exceptional and that woman's place on the large farms of the western provinces is usually as a helpmate to man, in which it must be said, there are thousands of openings.

The gentler phases of farming, however, appeal to woman, especially the robust, sturdy out-of-doors type, and this mode of livelihood is particularly appealing to those girls who worked on the land during the war and in the experience they gained learned to love the free, untrammelled life. In the Province of British Columbia, especially in the settled fruit areas, many women are running small orchards or fruit farms and doing all the work entailed themselves. In the same Province, close to the industrial towns and larger centres, many women are finding poultry raising a profitable means of livelihood and a calling which does not overtax their physical strength. Still others find a source of healthy revenue in bee keeping.

In the Niagara peninsula and other fruit regions of Ontario the same conditions prevail and here women are to be found wrestling a living in the pleasantest of environments and working conditions from the easily yielding soil. Each year sees a migration from the cities and towns to these districts and the orchards of the Pacific coast province, of women and girls of every profession and calling who find picking and packing fruit a profitable as well as pleasurable manner of spending a holiday.

Tackling Most Things Successfully

The small farms of the Maritime provinces, with their admirable settings of exquisite scenery and accessibility to all the markets, offer particularly fine opportunities to groups of two or more women either in growing fruit and flowers or in dairying. No region can hold forth greater attractions or be more suited to the healthy, energetic, out o'door girl who feels drawn to making her living on the farm.

Women in Canada may be said to have tackled most things and made a fair success of them even to attaining cabinet rank in the provincial legislatures. Last year a British Columbia woman attained some prominence because, finding the time heavy on her hands during the winter months, she set out to trap from her husband's ranch, and from an initial outlay of \$30 made a little nest egg by spring of \$1,800.

Indications are that girls are becoming more and more attracted to the active side of farm life, and it is significant to note that this year's graduating class at the Ontario Agricultural College includes the first woman in Canada to take the degree of Bachelor of Scientific Agriculture.

United States Immigration

The biggest factor in Canadian economic development since such time as Canada, a united Dominion, commenced to concern herself seriously over national growth and expansion, and stir organized effort to this end, has been immigration—the fundamental fabric which enters into the construction of new countries. Contributions to Canada's immigration tide have come from many countries in varying proportions and a heterogeneous assemblage of nationalities is evolving the status of the future Canadian. As however one peruses the immigration returns from year to year the two tributary tides which feature prominently in swelling the main current have their sources in the British Isles and the United States.

This exodus from the United States to the Dominion has always been regarded as a most gratifying feature of the latter's development, and so certain did Canada become of the annual trek that it has come to view as a matter of course each spring and summer's increment of this human donation of national building material without apprehension of its curtailment or cessation. For this reason to note in the immigration returns that the interruption the war brought to this flow is apparently ended, and that it is regaining its pre-war volume, is very welcome evidence. Canada may now expect in swelling numbers that host which reached the pinnacle of ascendancy just before the outbreak of the war.

In the year 1871, four years after Confederation, when the first Dominion census was taken, Canada was found to have a population of 3,485,701, and of these 24,162 persons were returned as having been born in the United States. It is evident, therefore, that the United State's contributions to Canada's population began at a very early date, in fact prior to the country's creation as a Dominion. The trend from across the line maintained substance and quality in the years following, but unfortunately Canada's system of recording immigrants at that time was very inaccurate, so that no reliability can be placed on returns before the year 1897. Twenty-five years have elapsed since that date, and carefully and accurately kept statistics record that in that quarter of a century featuring remarkable progress in Canada, the United States sent 1,398,527 citizens northwards to swell Canada's population, or roughly about one-sixth of the Dominion's present estimated population.

Brought an Average of \$372 Each.

The trek from across the international border was relatively of small numerosity, at first

amounting to only 7,921 in 1897. Year by year, however, it consistently increased in volume, reaching the fifty thousand status in 1906, and the hundred thousand in 1910. It arrived at its zenith in 1913, the year prior to the outbreak of the war, with a total of 139,009 citizens added to Canada's people. From 1914 to 1919, as all causes contributed to keep peoples at home, returns dwindled tremendously, and immigration for the fiscal year just passed amounted to 48,059, or about one-third that of 1913. Indications are however that interest in

Canada is again dominant across the border, and that the figures of pre-war days will shortly be recorded again.

Two pleasing features of United States immigration, as compared for instance with that from the British Isles, are that such a large portion of its members finds its way to the land where Canadian development is fundamentally centered, and that in their possession of wealth per capita they exceed any other contributing nation.

It is unfortunately not possible to state, or even accurately estimate, the numbers or proportion of United States immigrants who have become Canadian farmers, but it is significant that in the ten-year period 1901-1911, of the 175,781 United States citizens who arrived in Canada to make permanent homes 165,896 settled in the four western provinces with their newly-opened areas of fertile, agricultural lands. In the past quarter century of all the homestead entries, twenty-six per cent. were made by farmers from across the line, and in conjunction with this it must be remembered that most United States farmers come to Canada with substantial wealth and prefer to purchase private or improved land.

In the year 1920 of the 48,866 immigrants from the United States, 16,177, or roughly one-third, declared their intention of going on the land. In 1919 United States immigrants

brought with them an average of \$342 each, and in 1920, \$372.

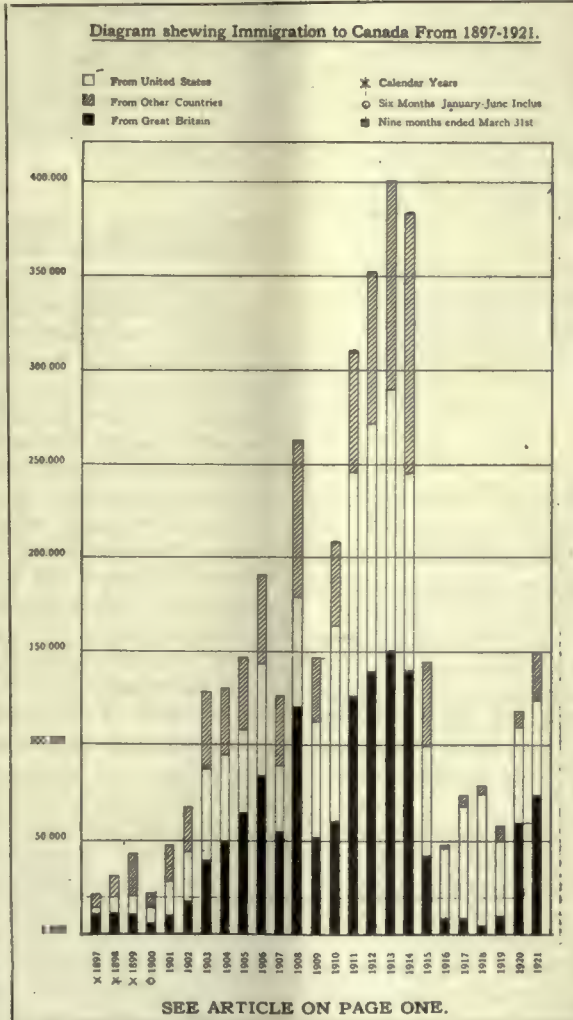
Canada's Climate

Actuated by apprehension that the people of the United States may get false ideas about Canada's winter climate from the stories of the experience of the balloonists, the organization committee of the American Chamber of Commerce in Canada has sent out a bulletin, whose purpose is to prevent such result.

The bulletin begins with the statement that

'Moving picture dramas have already spread an erroneous impression in the United States. Canada invariably is pictured as a snowbound Arctic wilderness where the inhabitants wear furs and snowshoes. Many of these 'Canadian scenes' are filmed in the Sierra Nevada mountains in California. These pictures have built a myth wholly false about Canadian winters that has retarded the the settlement of the Canadian prairies, which are so wonderfully fertile that farms frequently pay for themselves in a single crop of wheat.'

Then it goes on to say that the fact is that winter in the cultivated section of western Canada is hardly more rigorous than in any part of the United States, in the latitude of Chicago and New York, and the cold of the northern states is felt far more keenly because of the greater humidity. The cold of western Canada is dry and bracing.



Lie Within Moderating Influences

Alberta, Saskatchewan and British Columbia all lie within the moderating influence of the chinook winds that carry warmth far inland from the Japan current that washes the Pacific coast. These winds temper the climate far east of the Rockies. Long periods of sunshiny days make the winter of western Canada

a delight. "Sunny Alberta" is a household phrase.

On last New Year's day farmers of the Spirit river and McLennan districts of the Peace river region, 400 miles north of Edmonton, in what Americans are accustomed to consider the Far North, were still busy at their plowing. Golf and tennis have been played in Calgary almost without interruption all winter.

In conclusion the statement is made that if all this sounds merely boastful, the statistics of the weather bureau should prove conclusive. For the greater part of December overcoats were unnecessary in Edmonton. The lowest temperature was 10 and the highest 50 degrees. At Winnipeg the lowest was 10 and the highest 23. In the first 15 days of January the maximum at Calgary was 44, minimum, 10; at Winnipeg, 19 and 10; Regina, 23 and 8; Lethbridge, 35 and 9; Saskatoon, 31 and 19; Battleford, 29 and 14.

These are declared to be fair samples of winter temperature in Western Canada. They will compare favorably with winter records in Indiana, Illinois, Iowa, Kansas, Nebraska and Colorado.

Labor Situation

A review of the labor situation covering the month of June shows a slight improvement in the industrial situation, but with very little change on the whole. There is also a slight amelioration of the unemployment, though a practically stationery status was maintained during the month. Somewhat less time was lost during the period consequent upon strikes and industrial disputes than in the previous month, and that corresponding in the previous year, whilst a further gratifying decline in the cost of living was recorded.

A few industries such as building construction, lumbering and railway construction and maintenance exhibited fairly regular upward tendencies. Declines in fish canning and packing and increased activity in dairying and hotel service were seasonal reactions. Logging varied with the demand for pulpwood cutters, but exhibited on the whole a downward movement. Lumber and lumber products tended to continue the minor gains of the previous month. The manufacturing industries as a group fluctuated greatly, due to shut-downs in railway shops, with consequent reopenings affecting the iron and steel groups, especially in Quebec and Ontario.

Usual Seasonal Variations.

Textile firms tended to decrease the number of employees, whilst in leather products conditions were somewhat more favorable

than previously. Water transportation fluctuated, there being on the whole a certain increase. The coal situation, especially in Nova Scotia, is eased, though no large gains are recorded. Compared with the situation in the same month last year conditions were more favorable in all lines of industry.

The cost of the weekly family budget of staple goods continued to decline, averaging \$11.16 at the beginning of June, as compared with \$12.25 in May, \$16.92 in June, 1920, and \$7.35 for June, 1914.

The time loss due to industrial disputes was less during June than during either May, 1921 or June, 1920. There were in existence in June 44 strikes, involving 8,083 workpeople, and resulting in an estimated time loss of 161,910 working days.

A Growing Mineral Production

Canada is one of the richest countries in the world in her latent mineral wealth, nature having with bountiful hand made these gifts of a wide diversity, comprising almost all known minerals and most of the more valuable. Estimates of her mineral wealth must all be necessarily rough for some of the least explored regions of Canada are known to be the most potentially prolific in mineral products, whilst in those regions where minerals have been known for years and exploration widely conducted surveys are by no means thorough or accurate. From what, however, amounts to a virtual monopoly in certain highly prized minerals, Canada produces 90 per cent of the world's cobalt, 88 per cent of its asbestos, and 85 percent of its nickel. Inaccessibility of location, lack of the necessary capital for exploitation, and the greater availability of the deposits of other countries have hampered the greater development of Canada's other minerals, though a review of production records will show that Canada is maintaining a substantial output with usually proportionate annual increases. The time will assuredly come when all of Canada's deposits will be sorely needed—exemplified to-day in the extensive oil drilling in the Canadian Arctic—and then they will be adequately appreciated and developed accordingly.

Ontario, First Mineral Province.

The value of Canada's mineral production in 1920 was \$217,775,080, as against \$176,686,390 in the previous year, or an increase of 23.3 per cent. All minerals, with the exception of lead and quartz showed an increase in the value of production over 1919, though in the actual amount produced there were decreases also in pyrites, petroleum, and natural gas.

Ontario accounted for the highest mineral revenue with \$78,749,178, followed by British Columbia with \$38,044,915. Alberta jumped from the previous year to the third place in value, with \$33,721,898; Nova Scotia was close behind with \$30,187,533, whilst Quebec produced to the extent of \$27,722,502. Manitoba's mineral revenue was nearly four millions; New Brunswick's two and a quarter millions; Saskatchewan's over one and a quarter millions, and the Yukon's about the same.

With a production value of more than \$81,000,000 copper was Canada's most valuable mineral in 1920. Nickel was next with more than \$61,000,000, and zinc third with \$40,000,000. Lead was worth \$33,000,000; coal \$16,000,000; silver \$12,000,000; lime \$9,000,000; slate \$6,500,000; and cement \$6,500,000. Ontario accounted for 36.16 per cent of the Dominion's total production; British Columbia 17.47 per cent; Alberta 15.49 per cent; Nova Scotia 13.86 per cent; and Quebec 12.73 per cent.

The combined mineral production value of Canada during 1920 was the highest the Dominion has ever reached, and one attained in conditions of economic depression, falling prices, and a considerable cessation of operations at points which makes the outlook all the more pleasurable for future mineral production. The metallic production which in 1918, when the pinnacle of wartime efforts was attained, was valued at \$114,549,152, and fell to \$73,262,793 in 1919, came back to \$77,236,370 in 1920, whilst the total value of the non-metallic production which in 1918 was \$96,752,745, and increased in 1919 to \$103,423,507, increased again in 1920 to \$140,538,710. About \$23,000,000 of this increase is due to coal alone.

Exhibits Substantial Increments.

Just how Canadian minerals are being exploited and their production increased is evident on a survey of production for figures covering the last thirty-five years. In 1886 the mineral production of the whole of Canada was only \$10,221,255, or \$2.23 per capita. In the next five year period, or at the end of 1891, this production value had increased to \$18,976,616 and \$3.92 per capita. Another substantial increment had been added by 1896, when the production for the year was valued at \$22,474,256, and the increase in the next half decade was remarkable, bringing the total for the year 1901 up to \$65,797,911. Thereafter the progress was commensurate with the giant strides the Dominion was taking in other lines of activity. By 1906 the yearly output was valued at more than \$79,000,000; by 1911 at \$103,000,000; and in the following five year period the value nearly doubled, amounting for \$177,201,534 in 1916. A war-time spurt brought it up to \$193,000,000 in 1917, and this movement

reached its zenith with \$211,000,000 in 1918. There was naturally a depression in the first war year, but as has been seen, a recovery was made last year in such a fashion as to create a record for Dominion mineral production.

Canada's Fisheries 1920

The total value of the fisheries production of Canada in 1920 was \$49,321,217, according to a preliminary report prepared by the Dominion Bureau of Statistics. This shows a decrease from the previous year of \$7,187,262, which is, however, to be accounted for by the general decline in prices experienced during this period. In very catch there was an increase in quantity, amounting to substantial proportions in cases, and the Dominion has reason to be satisfied with the record of the year as recording a steady and maintained development of her wonderful waters.

Salmon continued to hold the premier place among Canadian fish in point of value accounting for a sum of \$15,595,970, or nearly one third of the total value. Lobsters came next with \$7,152,455; cod, \$6,270,171; halibut, \$4,535,188; herring, \$3,337,738; whitefish, \$1,992,107; haddock, \$1,552,680 and mackerel, \$1,126,703. Trout, sardines, smelts, pickerel and pilchards came in the order named between a million and a half million dollars in value.

British Columbia to the Fore.

Her gigantic salmon catch keeps British Columbia to the fore among the provinces of Canada, and in 1920 she continued in the supremacy with a fisheries' value of \$22,329,161. Nova Scotia with her fertile sea fisheries assumes second place with \$12,742,659. Following in order are New Brunswick, \$4,423,745; Ontario, \$3,410,750; Quebec, \$2,591,982; Prince Edward Island, \$1,714,663; Manitoba, \$1,249,607; Alberta, \$529,078; Saskatchewan, \$296,472; and the Yukon, \$33,100.

The amount of capital represented in the vessels, boats, nets, traps, piers, and wharves, etc., engaged in the primary operations of catching and landing the fish during the year 1920 was \$29,663,359. The number of employees engaged in these operations was 57,660. In fish canning and curing establishments there was a sum of \$20,512,265 invested, and these plants gave employment to a total of 18,499 work people.

Timber in the Prairie Provinces

It seems a contradiction in terms to speak of timber or the lumber industry in regard to Manitoba, Saskatchewan and Alberta, that vast territory so widely known as the prairie provinces. But it is the term which is at fault for the appellation is a misnomer and only the southern section of these provinces, that area first penetrated and settled, can

strictly be called prairie, and even so this apparently treeless vast is relieved by general clumps of brush, by the wooded banks of river and stream, and by the density of forestation on its rocky eminences. When the northern boundary of this prairie expanse is passed, a fine luxuriant parkland is pierced with bush; at first light and scattered, but becoming thicker and denser as progress is made northwards. Finally, in the north, heavy woods and swamps are encountered containing much merchantable timber and pulpwood.

With the vast stands of merchantable timber in other provinces existing in close contiguity to the railroads and other transportation means, and with the comparatively recent settlement of the western provinces and the almost exclusive attention paid to agriculture and its many phases, not a great deal of attention has been paid to timber in the west, excluding of course British Columbia, where the industry is of prime importance. But in the light of the universal talk of conservation of forest wealth, the heavy toll put upon other Canadian forest areas by reason of the wasteful methods of other countries in the past in regard to their own forests, with the possibility of their depletion or indeed exhaustion if the most rigorous methods of preservation are not extended, it will not be long before greater attention is paid to the more remote wooded areas of the prairie provinces and these areas be called upon to help out in the situation. A future awaits the prairie provinces at the hands of the lumberman and pulpman.

Five Hundred Million Acres

It has been estimated that there are about 500,000,000 acres of forest lands in Canada about half of which is covered with merchantable timber, and the value of the forest products in 1918 was \$279,548,011. The prairie provinces contain about eight million acres of commercial timber lands, 5,400,000 acres of which are in Alberta, 1,920,000 acres in Manitoba, and 750,000 acres in Saskatchewan. In addition to this, there are large resources of pulpwood upon which no really accurate estimate has been made.

Manitoba is about seventy per cent wooded, and in this province the principal heavily timbered sections have been set aside as government forest reserves located west of the Red River in the southern part of the province. On the upper plateau of this section are spruce, jack pine, and tamarac; in the lower plateau are found poplar and white birch; in the coulees elm, oak, basswood and white pine. The principal trees in order of present importance are white spruce, black spruce, jack pine, tamarac, balsam fir, aspen, cedar, burr oak, paper or white birch, white elm, green ash, white oak, balsam, balm of Gilead, black ash, basswood, Manitoba maple, cottonwood, red ash, and mountain maple.

Whilst little extensive commercial use has been made of these woods from the lack of exploitation due to conditions already noted, they possess a potential worth commercially of some magnitude, and have already been extensively made use of locally. The province it has been estimated, contains about 1,920,000 feet of saw timber or 4,000,000 feet B. M.

Alberta is estimated to contain about twenty one billion board feet of saw timber, the principal species being spruce, lodgepole pine, Douglas fir, poplar balsam fir, white birch and tamarac. Fires have wrought destructive havoc in the forests of the province much of which has been devastated and on the burnt-over areas the reproduction is mainly lodgepole pine with areas of poplar and birch. Lumbering operations are principally confined to the Rocky Mountains Reserve which contains all the lumber at present merchantable in Alberta.

There are nearly eight hundred square miles at present under license on permits issued prior to the establishment of the reserve.

Saskatchewan Well Timbered.

In Saskatchewan the area actually timbered with merchantable trees is about 750,000 acres, the country to the north-east being heavily timbered with spruce, tamarac, and jack pine. Prince Albert is the centre of Saskatchewan's lumber industry.

Though the timber trade of the prairie provinces has not as yet made a startling record in Dominion figures, it is provincially of a high value and of great local importance, and the economic history of the great plains would have been very different but for their possession of the northern woods. Whilst little if any of the timber cut ever gets beyond the borders of its native province, there is a local market whose demands are increasing yearly. The prairie provinces are showing a steady expansion perhaps unprecedented in the history of new countries and their cities and towns, and above all their agricultural areas, have need of lumber in ever increasing quantities.

The lumber cut for the year 1918, the latest return available, for the prairie provinces, was, according to the Dominion Bureau of Statistics, 152,270 million feet B. M. valued at \$3,836,053. This is divided among the three provinces as follows: Manitoba 54,047 million feet worth \$1,240,052; Saskatchewan 75,835 million feet worth \$2,122,307; and Alberta 22,388 million feet worth \$473,694. The total cut of the three provinces represents nearly three per cent of the cut all over the Dominion.

Administered by Dominion Government.

In the provinces of Alberta, Saskatchewan and Manitoba, in common with the North West Territories and the Railway Belt in British Columbia, the forests are administered by the Department of the Interior of the Dominion government from whom leases of timber or permits to cut upon forest reserves must be secured. There are thirty-nine forest reserves in Western Canada twenty-six of which, with an aggregate area of nearly 32,500 square miles, are situated in the three prairie provinces.

Little has yet been noted of the pulpwood resources of these provinces, an important item at the present time in view of the heavy call being made upon the forests of the east and the commencement made upon those of British Columbia on the Pacific coast. Roughly it may be stated that the prairie provinces have substantial resources of the raw material for the continent's paper mills which are delving into every corner of Canada's forests for supplies, and that these are practically untapped as yet.

No accurate estimate has ever been conducted in this territory, except to arrive at a calculation of 85,000,000 cords of spruce and balsam, besides which in many sections of the north there are dense stands of poplar and jack pine. A new value has been put upon the forest resources of the prairie provinces by the discovery of the use of jack pine in paper making, for this tree is found extensively over that country.

The forests of the prairie provinces though subservient in their value and production to other natural resources, are by no means insignificant and will form a substantial source of Dominion revenue when, with the inevitable depletion of constructive woods and pulpwoods in areas at present being exploited, the call is made upon them. Meanwhile they are doing valuable work in meeting local demand, and the Dominion's care should be to preserve them against wasteful ravages for the time when more extensive utilization will be made of them.

Departmental Publications

Any of the following publications will be sent free on request.

Alberta, Saskatchewan and Manitoba.—A descriptive statistical booklet on the three prairie provinces with full information on the West.

The Park Lands of Central Alberta.—Descriptive of the area tributary to the Calgary and Edmonton line of the Canadian Pacific Railway in Alberta. History, description of soils, development, lands open for settlement, and information for settlers.

Irrigation Farming in Sunny Alberta.—Full description of Alberta's irrigated lands, their progress, production and possibilities.

Business and Industrial Opportunities in Western Canada.—Full listings of industries existing and business openings in the provinces of Western Ontario, Manitoba, Saskatchewan, Alberta and British Columbia.

Canadian Pacific Reserve Farm Lands in Lloydminster and Battleford Districts.—Information of Canadian Pacific lands in these districts, history, farming information, progress, and possibilities.

Canada's System of Government.—Canadian government briefly outlined to portray its democratic traits.

The Story of Canadian Nickel.—History of the nickel mining industry.

Canadian Oil Exploitation and Prospects.—An expert engineer's history of Canadian oil development and future possibilities.

Canadian Water Power Development.—Authoritative and exhaustive survey of water power reserves and possible development.

Paper Pulp from Flax Straw.—An investigation engineer shows the possibility of the development of a new industry in the West.

A Canadian Grain Handling Plant.—How Canadian grain is stored and shipped. Authoritative article on Canadian elevators.

Value of a Settler to Canadian Railroads.—Computation from reliable statistics of a farming settler's revenue-producing worth to Canadian railroads.

Bituminous Sands of the Athabasca Region.—Description with known values, and possibilities of development of the widely known tar sands of Northern Alberta.

The New Canadian Oil Field.—Dealing with the Arctic oil region of the new strike.

Water Powers of the Maritimes.—Authoritative article on the undeveloped power system of the Eastern provinces.

Water Powers of Manitoba.—The water powers of this province dealt with exhaustively.

Oleomargarine.—History of oleomargarine in Canada and its future prospects.

Lignite Utilization Board of Canada.—Descriptive of the primary operations leading up to the production of briquettes from Saskatchewan lignite.

Taxation in Western Canada.—A comprehensive explanation of the systems of taxation existing throughout Western Canada.

Synopses of Natural Resources.—Forty-five pamphlets dealing briefly but concisely with Kaolin or China Clay, Oil Shales, Mica, Fluor-spar, Asbestos, Molybdenum, Magnesite, Fruit, Flax, Fibre, Nickel, Coal, Clays, Salt, Copper, Zinc, Gold, Pyrites, Iron, Potash, Talc, Feldspar, Platinum, Phosphate (apatite), Manganese, Graphite, Cement, Barytes, Gypsum, Irrigation, Petroleum and Natural Gas, Corundum, Sulphates of Sodium and Magnesium, Timber and Pulpwood, Fish, Fur, Peat, Grazing Lands, Mineral Waters, Building and Ornamental Stone, Whaling, Sealing, Wheat, Oats and Barley, and Water Powers.

Motion Picture Films

A print of each of the following films issued by this department is deposited with the representatives listed on the back page. These are available upon application for use by schools, theatres, clubs, societies, boards of trade, and other associations and organizations.

Homemaking by Irrigation.—Irrigation farming in Southern Alberta, the various operations and their results.

The Land of Promise.—Featuring the well-known agricultural section of Battleford, Saskatchewan.

Opportunity.—Illustrative of Western Canadian opportunity, more specifically in the district of Lloydminster, Alta.

Livestock and Dairying.—The fine status and remarkable progress of this industry in Western Canada pictured.

Taming the Last West.—Depicting the evolution of the Canadian West from buffalo range to a modern agricultural area.

The Sunny Side of Rural Life.—The farmer on holiday, showing that life in Western Canada is not all work.

The Evolution of a Grain of Wheat.—The life of wheat seed from the time it is sown until its progeny enters into the composition of a loaf of bread.

Apple Growing in Evangeline's Land.—Orchard cult in the region Longfellow's poem made famous.

The Apple Harvest of the Okanagan.—Gathering and shipping apples in the beautiful British Columbia Valley.

Curing Fish in Nova Scotia.—Depicting the various phases of curing and smoking fish in the Maritimes.

The Canadian Sardine.—The sardine caught, canned and distributed.

Some Water Powers of Eastern Canada.—The beautiful and powerful waterpowers of the Eastern Canadian provinces.

The Silver Fox Industry of Canada.—The domestic ranching of silver foxes in Prince Edward Island.

The Department of Colonization and Development

The Department of Colonization and Development has the following offices established in the United States, Great Britain and Europe, whose representatives, at any time, will be glad to furnish information regarding Canadian agricultural, industrial and commercial enterprises.

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WINNIPEG, Man.	J. F. SWEETING, Industrial Agent, Canadian Pacific Railway.
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or any agent of the Canadian Pacific Railway Company or Canadian Pacific Ocean Services, in United States, Great Britain, or Europe.

J. S. DENNIS, CHIEF COMMISSIONER,
Department of Colonization and Development,
Canadian Pacific Railway Company.

Ask the Canadian Pacific about Canada.



Agricultural and Industrial Progress in Canada

A monthly review of Agricultural and Industrial progress in Canada published by the Department of Colonization and Development of the Canadian Pacific Railway at Montreal, Canada.

Vol. 3—No. 9

MONTREAL

September, 1921

Facing the Future Optimistically

"CANADA is better able to face the future than almost any other country in the world," said Sir Robert Kindersley, a director of the Bank of England and Governor of the Hudson's Bay Company at the recent annual meeting of that corporation in London. There are few men outside Canada better able to speak on the business future of this country, for in addition to being one of the leaders in the commercial and financial life of Great Britain, he is head of a company that has been trading in Canada for over 250 years and has travelled it from end to end. He should know whereof he speaks. There is no corporation that knows more about Canada and few that have been as successful; 40% on the common stock, the rate during the last three or four years, is a pretty fair return.

Taking advantage of the action of the United States in placing high duties on Canadian exports which, if nothing else is bound to make it more difficult to sell American goods in Canada through the rising rate of exchange, the British are making special efforts to capture Canadian trade. Announcement to this effect was recently made in the British House of Commons. Samples of American goods that have been sold very generally in the Western Provinces have been taken to England with the result that British manufacturers will endeavor to meet this demand.

Unusual pains are also being taken to secure the right kind of agents in this country. It appears as if the United States looks with complacency on the action of Congress in seeking to keep out Canadian products, saying that "it is an ill wind that blows nobody good."

After spending two months in England during which time he also visited France, Premier Meighen has returned to Canada full of confidence over its future. "Those who lament about Canada," he says, "have not seen much of other countries in these times. We have our troubles here in Canada, of course, but we are in a sound and comparatively strong position."

The basis of this optimism on the part of Premier Meighen and Canadians generally is doubtless the realization of the fact that Canada has the resources the world needs.

GOVERNMENT CROPS ESTIMATE 1921

Wheat.....	288,493,000
Oats.....	457,544,000
Barley.....	58,027,000
Rye.....	11,707,100
Flax Seed.....	6,930,000
Potatoes.....	99,937,000

The gross mercantile marine tonnage on the Canadian register at the end of June was 1,583,000 tons. As an indication of what this means it may be said that the total gross tonnage of all other British Dominions outside of the United Kingdom is only equal to 400,000 gross. The Canadian Pacific now

occupies an important place among the fleets of the world and has recently acquired a further 22,000 ton vessel, the Empress of China. Thirty five years ago the Company sent out its first vessel, "The W.B. Flint" a sailing ship of 800 tons, from Yokohama, Japan, to Port Moody, near Vancouver, ten days before the Trans-Continental route was opened up.

Italian shipping interests being able to book a great many more immigrants than they can land in the United States under the present Immigration Restriction Act are apparently looking to Canada as an outlet and so the Navigazione Generale Italiana has inaugurated a Canadian service, the first established line between the two countries.

Agricultural & Industrial Progress in Canada

Published Monthly. Free on request.

It will be appreciated by the Department if editors and writers using matter from this Bulletin will quote source.

Norman S. Rankin, *Editor of Publications.*
E. L. Chicanot, *Asst. Editor.*

The rate of exchange is so increasing the price of U. S. coal in Canada that Nova Scotia collieries are finding it profitable to market their product in Ontario, which they never before did. Last year Canada, which imports the greater part of its coal from south of the line, paid twice as much for it as she did the year before and on top of this was nearly \$14,000,000 in exchange. In other words, on anthracite coal that enters duty free, the exchange really levied was 13%.

The Province of Quebec reports a surplus of \$1,230,000 of ordinary receipts over expenditure for the past fiscal year.

During the twelve months ending June, Canada imported from the United States commodities to the value of \$766,393,000 out of a total of \$1,085,311,000 from all countries, this being four and one-half times the value of imports from the United Kingdom.

Canada therefore, faces the future optimistically.

General Agricultural Situation

*Thos. S. Acheson, General Agricultural Agent,
C. P. R., Winnipeg.*

The Prairie Provinces, Aug. 20th, 1921.

Cutting of practically all grains is about completed in Central and Southern districts of the Prairie Provinces, and has commenced in Northern areas. By the time this article goes to press threshing will be general and the heavy rail movement will have again begun to the head of the lakes. The season has been a most unusual one and when the several weeks of hot dry weather is considered, together with some severe losses by hail, particularly in Saskatchewan, the crop being garnered is as satisfactory as could be expected.

Ample rainfall during the past month helped along late grains and materially improved pastures, especially benefitting Southern Alberta where the feed situation has given reasonable cause for alarm. Cutting of rye has been completed, and threshing returns are proving most satisfactory with yield considerably exceeding that of last year. The Canadian Pacific Railway are co-operating in an effort toward persuading farmers to put in a big acreage of winter rye this fall particularly in Central and Southern portions of Saskatchewan and Alberta, and anticipate success in this direction inasmuch as those who have a rye crop this year have been

successful, it showing good results in dry areas where wheat failed.

Conditions are so uneven that it is difficult to reasonably estimate the crop until threshing becomes general, although the Dominion Government (August 10th) give the following preliminary figures.

For the three Prairie Provinces the forecast in bushels is, Wheat 264,912,000 (234,138,000); Oats 300,156,000 (314,297,000); Barley 41,298,000 (40,760,500); Rye 9,106,000 (8,273,600); Flaxseed 6,555,000 (7,588,800).

Manitoba:—The yield in bushels, Wheat 39,870,000 (37,542,000); Oats, 58,425,000 (57,657,000); Barley 18,488,000 (17,520,000); Rye 2,700,000 (2,318,600); Flaxseed 865,000 (1,157,800).

Saskatchewan:—Wheat 155,445,000 (113,135,300); Oats 158,122,000 (141,549,000); Barley 12,420,000 (10,501,500); Rye 2,847,000 (2,535,000); Flaxseed 4,992,000 (5,705,000).

Alberta:—Wheat 69,597,000 (83,461,000); Oats 83,609,000 (115,091,000); Barley 10,390,000 (12,739,000); Rye 3,559,000 (3,420,000); Flaxseed 698,000 (726,000). The figures within brackets represent the finally estimated yield of 1920.

Livestock:—The cattle market continues to be extremely dull, and farmers are discouraged in attempting to market their cattle. If the embargo should be raised in Great Britain as is hoped and anticipated it would afford relief as would also lifting the barrier by the United States. The hog market is good with prices decidedly firm. The horse market remains stagnant and only a limited demand for the better class of horses exists. The thing very noticeable this year is the remarkably fine condition of livestock generally, this being the natural result of more abundant and less expensive feed.

British Columbia:—Continued dry weather is affecting root development in certain places and yield of potatoes will probably be 20% below normal, partly due to small acreage. Hay crop 25% above the average. Grains general average yield and cutting under way. Vegetables and tomatoes are moving and prospects continue excellent. Early plums, peaches, apricots and Duchess apples now being well marketed and other varieties and pears developing well. The output of the Okanagan Valley is estimated to equal the previous record year of 1919. Pasturage is fair, but at time of writing badly needs rain.

Ontario:—Harvesting in many districts has been finished and reports indicate yields are generally lighter than last year. With the exception of potatoes, which are likely to be a short crop, roots promise to be good. Apples will be below average and tomatoes plentiful.

An excellent yield is promised for corn. Recent rains have improved pasturage.

Quebec:—Harvesting of hay is practically all completed, yield being light. Probably 50% of average yield. Cereals are reported doing fairly well, owing to recent rains. More moisture required for root crops, which are fair. Slight improvement in pasturage.

Maritime Provinces:—Harvesting of hay practically completed, yield light. Lack of moisture retarded all crops. Fair promise for roots, but likely below average. Recent rains have improved pasture, but general conditions only fair. Fruits, principally apples promise well. Heavy recent rains in New Brunswick and Prince Edward Island have been generally beneficial.

Farm Owner, not Tenant

In all reason man was intended to live upon the land and own a small plot of mother earth. Yet it is the existing state in the older European countries, and the trend in the United States is to fast bring about the same condition, for all the land to come into the possession and under the control of a minority of the population. Thus do not only all the men of the nation not possess land but many agriculturalists do not own the holdings they till and cultivate, but are merely tenants paying rent to their landlords annually for the fruits the earth yields to their efforts.

An agricultural survey of one of the counties of Minnesota recently appeared which indicated that nearly half of the farmers in that county are merely tenants and not owners, paying for the privilege of aiding the land to become productive. This is a purely fortuitous example and in the absence of statistics it is not known how this proportion would agree with that for the whole state or the total farming area of the country. But certain it is that a great number of the farmers of the United States do not own the land they farm, and each year are under the obligation of returning to their landlords a substantial portion of that revenue they have induced the land to yield. And with increased population and settlement the tendency is all this way. In the British Isles and continental Europe the hope of land tenure is of course much more hopeless and the absolute acquisition of a plot of ground is practically beyond the aspirations of the average citizen,

Tenant farming is in every way unsatisfactory, and on the other hand there is a gratification in owning a piece of land which nothing else exactly imparts. The natural satisfaction which the owner of a piece of land experiences, material and sentimental, in improving it and maintaining it in perfect fruition is denied to the tenant, who, in addition to lacking the in-

ducement of ownership, pays rent according to the value and productivity of the farm he occupies. A man who intends to occupy a farm all his life is certainly going to treat it better than one who may be gone at the close of the season, and it logically follows that the first man is going to be the better citizen and greater national asset.

A Land of Farm Owners

Canada furnishes a diametrically opposing picture—a land of farm owners and farm land-wanting owners. Broadly it may be stated that there are few tenant farmers in Canada. The Dominion may come to this state eventually but the time is not in sight with the vast tracts of virgin agricultural land of proved fertility awaiting settlement, millions of acres to make permanent farms for tens of thousands of farm owners. Improved farms, close to railways and markets, can be purchased yet for prices even lower than farmers in other countries pay to cultivate for one year. And not only have farmers bought farms in Canada at the same purchase price as they were accustomed to paying rental, but it has been no uncommon occurrence for the first crop to refund them the purchase price in its entirety.

Homestead land, the available extent of which is fast decreasing under the absorption of settlement, may be secured for but the fulfilment of a few residential and cultural duties, offering for nothing in return a permanent home and a farm of a quarter of a square mile in area for all time. It is difficult now-a-days to secure homesteads except at some distance from the railroads, but in the rapidity of settlement and increased production, towns with all their improvements and conveniences spring up, railroads are extended, and the homesteader finds that he is in the centre of a thriving farm colony and his land worth anything up to \$100 per acre, of which he is the sole owner.

With wide tracts of rich agricultural land awaiting settlement and improved farms to be purchased at low rates in Canada, offering comfortable homes and substantial land holdings for all time, the wonder of it is that there are still farmers who are content to be tenant farmers elsewhere.

The Destination of Canada's Crop

During the seven years 1915 to 1921, the total exports of grain from Canada amounted to 1,222,664,772 bushels. Only fifteen per cent. of this went to the United States, the balance of 85 per cent. going to other countries. Of the total exportation of grain during this period, 415,950,748 bushels, or 37 per cent., left Canada by Canadian sea ports, whilst 541,900,167 bushels were exported via the United States. Grain,

however, exported through the customs ports of Abercorn, Coaticook and St. John's, P.Q., has to be hauled for long distances on Canadian lines. The quantity of grain destined for other countries than the United States and exported through these three ports during the seven years amounts to 137,449,846 bushels, which for practical purposes may be regarded as an addition to the quantity exported through Canadian seaports, viz., 415, 950,748 bushels and making the total to be 553,400,594.

In the period under review, the heaviest export shipments of wheat were made in the three war years, 1916, 1917 and 1918, the largest quantity being 189,643,846 bushels for the year ended March 31st, 1917. For 1919 the quantity fell to 41,808,897 bushels, the smallest of the series. The total wheat exported for the seven years was 818,696,828 bushels. Of this quantity 713,522,796 bushels, or 87 per cent., was destined for countries other than the United States, 451,691,743 bushels or 63 per cent going through United States ports and 261,831,053 going or 37 per cent., going through Canadian seaports.

Shipments via the United States

The latest returns of Canadian export trade show that more than one-third of Canada's exported wheat and one-quarter of its flour in the season just elapsed, went to the United States. From September 1st, 1920 to May 31st, 1921, wheat exports amounted to 122,549,528 bushels valued at \$268,262,638, of which 47,656,963 bushels valued at \$100,689,425 went to the United States, 28,171,956 bushels valued at \$60,079,445 to the United Kingdom and 46,720,609 bushels valued at \$107,493,768 to other countries. Of the wheat shipments to countries other than the United States, 52,373,194 bushels valued at \$109,238,164 went by way of United States ports, and 22,519,371 bushels valued at \$58,335,049 by way of Canadian seaports.

Exports of Canadian wheat flour for the nine months ending May 31st, 1921, reached a total of 5,432,405 barrels valued at \$56,713,745, of which 2,617,963 barrels valued at \$26,149,756 went to the United Kingdom, 1,245,611 barrels valued at 12,193,107 to the United States and 1,568,930 barrels valued at \$18,370,895 to other countries. Of the exports of Canadian wheat flour to other countries than the United States, 1,801,964 barrels valued at \$17,329,860 were shipped by way of the United States ports and 2,384,929 barrels valued at \$27,190,791 by way of Canadian seaports.

Saskatchewan Farm Revenue 1920

The province of Saskatchewan is noted for the vast quantities of grain it annually produces, and the figures for 1920, which have just been

issued by the Provincial Department of Agriculture, not only corroborate this, but also reveal the fact that besides being a grain-grower it receives a large revenue from livestock activities. The official figures give the total value of agricultural products and livestock as \$549,997,969, of which sum the value of agricultural products is \$308,967,214, and livestock, \$241,030,755.

Of the agricultural products produced in the province last year, wheat leads all other grains in value, in fact, as much as all other products combined. Slightly over ten million acres were planted in wheat, from which 113,135,274 bushels were produced, valued at \$175,359,674. This compares very favorably with the preceding year when the crop was much smaller.

Of the other grains grown, oats stand out predominately, 141,549,000 bushels, valued at \$58,035,090, being grown on 5,106,822 acres. These figures indicate, to a large extent, the estimation in which this grain is held by Saskatchewan farmers. Both the acreage and the yield are the largest since 1916.

Dairy Products and Cattle

The value of creamery products, owing to an intensive educational campaign conducted by government and other officials interested amongst the farmers of Saskatchewan, has increased phenomenally. In 1916 the total value of dairy products was \$1,338,180, increasing to \$2,221,403 in 1918 and to the record figure of \$23,043,048 in 1920.

Horses and mules, to the number of 948,280, were valued at \$151,724,800, which is more than half the total value of livestock and more than the combined value of all other livestock. Cows were second in value with \$35,450,700, followed by other cattle, \$26,673,075; swine, \$7,725,600; steers, \$7,191,140; calves, \$6,526,160; bulls \$4,130,100; and sheep, \$1,609,180.

Last year there were in operation throughout the province a total of 3,600 grain elevators, ranging in size from the small 35,000 bush standard to the mammoth government elevator, with a capacity of one million bushels and more. These elevators, a large proportion of which are owned and operated by farmers' organizations, have a total storage capacity of 110,000,000 bushels.

The Progress of Cultivation

There is no clearer record or more striking illustration of Canada's agricultural progress than that to be gleaned from a survey of the year's cultivated acreage, noting the increments each succeeding spring's activities has brought, with its sequel in the fall in a proportionately increased production. The causes are not far to seek. Canadian farm lands have found increasing favor with the peoples of many coun-

tries. A substantial portion of Dominion immigration finds its way to the land, nearly two thousand newcomers in 1920, for instance, being added, according to declaration, to Canada's agriculturalists. There is a constant stream, thin at times and fluctuating and wavering with industrial and economic conditions, from the city to the farm. There is the added acreage broken each year and rendered productive on those farms already settled and improved. All these are factors in increasing the amount of productive land and the output of agricultural produce.

It must be borne in mind that all uncultivated land is not necessarily unproductive. This would place under the negative head the extensive acreage devoted to pasturage with its important and valuable product. And in considering this phase in the light of the small cultivated area of thirty years ago, when the Western prairies were stretches of horse, cattle and sheep range, it is well to remember that at present, when these are largely parcelled into grain and mixed farms, their intensive methods are surpassing the livestock production of the giant ranches.

In 1871, four years after Confederation, when the first Dominion census was taken, there were slightly more than thirty-six million acres of the fertile land of the Dominion settled upon and occupied as farms, substantially less than the area in Canada which is to-day productive of field crops. In the ten years following this occupied farm area increased to well over forty-five million acres. It added another fifteen million acres in the period 1881 to 1891, or about a million and a half acres per year, indicative of the wave of farmer immigrants which besieged the country in that decade. At the beginning of the new century the total area of land occupied by farm settlement in Canada was more than sixty-three million acres.

Steadily Increasing Farm Cultivation

In 1891, about fourteen million acres, or twenty-three per cent. of the settled area was under field crops, the remainder being pasturage, timbered land, or for some reason unproductive. Five million acres were added in the ensuing decade, the total cultivation in 1901 accounting for nearer twenty than nineteen million acres, this being more than thirty per cent. of the occupied area. Wheat production in this ten-year period jumped from forty-two million bushels to fifty-five million bushels, and oats from seventeen million bushels to twenty-two million bushels.

The next decade witnessed the most remarkable progress in cultivation as the unstemmed tide of immigration swept over the land and farming operations commenced for the first time in many new areas. By 1910 there were more than thirty-seven million acres producing crops

in Canada. From that time on a steady and sustained increase has been maintained. Two million acres were added in the last five years, bringing the total up to more than thirty-nine million acres in 1915. Tribute to the speeding up of war-time production in the abatement of the human tributary flood is accorded in the figures of the next five-year period, which indicate an increment of no less than thirteen million acres or nearly three million acres per year, the acreage devoted to last year's crop being 52,830,865.

A Billion Dollar Crop in 1920

The surprising progress of the Western Prairie Provinces at the hands of new farmers who have settled there and broken the virgin sod, bringing millions of fertile acres into fruitfulness to a large extent accounts for the increased Dominion acreage in the last decade. Whereas in 1910 there were but eleven million acres under cultivation, this increased to eighteen millions in 1915, and in 1920 had reached the astonishing aggregate of more than thirty and a half millions of acres awaiting the plough to bring them to the same state of productivity.

Canada is a vast land of 1,401,000,000 acres area. Thirty-one per cent. of this total, or 440,000,000 acres has been declared fit for agricultural cultivation. Yet of this tremendous total only 110,000,000, or one-quarter, is occupied by farms and about 52,000,000 or one-eighth is producing crops. Much more, of course, is valuable and productive as pasturage, etc., but these figures indicate the wide latitude which still exists for development and the expansive area of rich, fertile, land awaiting settlement.

Canada has a notable record of production already which she has achieved in a remarkably short space of time, and her status as a billion dollar crop producer places her high on the list of agricultural countries. She has yet, however, a long way to travel before attaining her zenith of productivity, but her progress to that end will, in the light of conditions and circumstances, be even more rapid than that recorded in the past half century.

Industrial Ontario

Ontario is the richest province of Canada. Of the Dominion's wealth, estimated at \$2,801,000,000 for the year just past, Ontario's share was \$1,267,000,000. Consistent with the remainder of the Dominion, agriculture asserts its superiority over other lines of activity and maintains the premier place in provincial assets. Ontario is, however, the first industrial province of Canada, considerably more than fifty per cent of the product of the Dominion's manufacturing plants being attributable to this province.

At the end of the year 1918 out of a total of \$3,034,301,915 invested in industry in Canada, the sum of \$1,508,011,435 was held by Ontario corporations and manufacturing companies. The 15,365 plants in the province had that year a production of \$1,809,067,001, utilizing material valued at \$1,008,824,704. A total of 333,936 persons were employed, drawing wages and salaries aggregating \$261,160,214.

Of the twenty most important centres of the Dominion, as reported by the government Bureau of Statistics, fourteen are located in the Province of Ontario: Toronto; Hamilton, Ottawa, London, Kitchener, Brantford, Peterborough, Galt, Guelph, Welland, St. Catharines, Sarnia, Stratford and Windsor. Toronto comes second only to Montreal in industrial importance with 2,835 establishments employing 106,128 persons, with a capitalization of \$392,945,178 and a production of \$506,429,283. Hamilton, with 685 establishments, a capitalization of \$31,901,388 and production of \$188,456,598 is the third manufacturing city of the Dominion.

A Distributing Centre for the West

Ontario is the manufacturing and distributing area to a large extent, for the expansive field of the great Canadian West and its industrial activities cover a wide latitude, practically every necessity of town or rural settlement being supplied. The agricultural implement industry is therefore naturally, an important one and accounts for a capitalization of more than \$77,000,000. This is, however, exceeded by the pulp and paper industry in which Ontario is proving herself a serious rival of Quebec with an investment of nearly \$100,000,000. The wealthy forests of the province are reflected in the importance of the lumber industry in which more than \$46,000,000 is invested, whilst many smaller allied trades help to swell the aggregate of works dependent in the first instance upon forest growth.

Flour milling has reached important proportions in Ontario with over \$40,000,000 engaged in actively propagating the industry. Several cities and towns have virtually secured a monopoly of the Canadian automobile trade, many of the plants operating being branches of United States organizations, and in all over \$50,000,000 is invested in this manufacture.

Ship and boat building is of moment on the inland waters of the province and this industry accounts for more than \$31,000,000 in the provincial capitalization. Electrical apparatus manufacture accounts for another \$25,000,000. Clothing, textiles, and boots and shoes are all important in this province. More than \$10,000,000 is engaged in each of the industries, cotton textiles, men's wear and boots and shoes, whilst in hosiery and knit goods nearly \$27,000,

000 is invested. Also worthy of mention are Ontario's 23 rubber plants, its 88 canning factories, and its 22 packing plants with 4 abattoirs.

All Facilities for Industrial Growth

Ontario has all the natural advantages and facilities for industrial growth. These have already given her the ascendancy in Canada in this regard, a position which she easily maintains in her rapid expansion, an augury of tremendous future manufacturing importance. She possesses within her confines a wealth of raw material and fine transportation facilities of economic operation, for import and export. Her industrial growth is aided in a wonderful way by her possession of enormous water powers, for which the Hydro-Electric Commission of Ontario acts in the capacity of trustee for the people in the matter of their development, supplying electric current for lighting and power purposes at cost.

The rate at which Ontario is expanding as an industrial area may be gauged from the fact that in the year 1920 the City of Toronto, its first centre, received the addition of twenty-eight large new industries, whilst twenty-five settled at Hamilton, next in manufacturing importance. These covered many lines of manufacture, many of which were entirely new to the province. A notable feature of the province's expansion has been the large number of plants operated by United States capital and the establishment in so many cases of branch houses of United States firms. In the city of Toronto alone, there are 175 United States branch industrial plants in operation.

Flying in Canada

The Great War in the tremendous impetus it gave to invention of many kinds, thrust aviation forward by several epochs. Great strides were made toward perfection in apparatus and thousands of men were trained for the various branches of the pursuit who in the ordinary course of events would never have dreamt of this novel vocation, and to whom, in the majority of cases, opportunity for following it would never have presented itself. The end of the war found thousands of machines with the work for which they had been manufactured accomplished, and thousands of men specially trained to operate them going back to their ordinary civil avocations.

Reviewing Canada's part in the war, it was the most natural thing that with intelligent government appreciation and support, flying should receive a great boost in the Dominion. Many of Canada's sons favored this hazardous branch of war aviation and Canadians constituted nearly fifty per cent. of the Imperial

Flying Service by the conclusion of hostilities. Many of these young men, apart from the zest and adventure which made them love soaring in the air, from the speciality of their training and the length of time they had devoted to the pursuit of aviation, regarded it as their life profession, having reached heights of greater efficiency in this line than their pre-war occupations. On demobilization they viewed flying with greater congeniality and saw in it greater opportunity than the pursuits they had given up to enlist.

Put to Multifarious Uses

Canada was quick to realize the many uses to which these war-perfected machines could be put to in her national life in times of peace, and the advisability of enlisting rapidly in her peace-flying army the host of trained men who were returning to her shores. Aircraft were quickly adopted for all manner of public work and their utilization is still being rapidly extended. Most provincial governments find flying craft invaluable in forest work, patrolling, assisting surveys, photographing and particularly in reporting and combating forest fires. They have been introduced into the fishing industry to locate fish schools and signal their approach. Machines of both heavy and light types have engaged in the seal hunt and threaten to revolutionize the industry. In many sections government mails are carried by aeroplanes.

Private organizations, particularly lumber and pulp and paper companies, are utilizing them to an ever-increasing extent as they discover the greater economy and accuracy as well as rapidity of work conducted from planes. Commercially the scope of their work is continually enlarging both in freight and passenger service, and business firms of this nature which a couple of years ago could be enumerated on the two hands, have grown to cover several large pages. The extensive use of aircraft has this summer brought the oil fields of the sub-Arctic much nearer to civilization and accessible to greater and more rapid exploitation.

The Canada Air Board

To supervise flying, to stabilize the pursuit in Canada, and to protect both flyers and the public by seeing that only capable qualified men engaged in the practice, the Canada Air Board was authorized by act of Canadian parliament in 1919 and has practically entire supervision of all matters connected with aeronautics in the Dominion. Among the phases of their work is to construct and maintain government aerodromes, to examine and report on proposals for commercial air services, and to prescribe aerial routes. The Board regulates the licensing of pilots in aircraft, sees to the registration of li-

censes and generally that flying in Canada maintains efficiency and precaution. A government body, having direct control over government flying, it embraces in its scope all Canadian aviation.

The high efficiency of Canadian government flying is illustrated in the Board's published statistics for the year 1920, when in an approximate mileage of 33,612 miles covered there were only three slight crashes and one person slightly injured. Government machines made 398 flights during the year and the number of hours flown was 480. The statistical summary of civil aviation in Canada shows 18,671 machine flights made and 6,505 machine hours flown. The average duration of civil flights in minutes was twenty-one and 15,265 passengers were carried in the flights made. Passenger hours flown were 5,614 and a total of 6,740 pounds of freight were carried.

10,000 Taking "Refresher" Courses

The government, through the Air Board, is making the greatest utilization of the expert training so many Canadians have received, and in addition to those engaged in the regular pursuit of flying, endeavors to keep all trained men who desire to so fit themselves up to a state of efficiency. Thus "refresher" courses have been introduced to give ex-pilots a month's flying at the government's expense. This summer ten thousand ex-air service men are availing themselves of these courses and keeping their hands in. In the first eight months of this innovation, ex-air force officers did over 2,200 hours of flying, covering a distance of approximately 200,000 miles. Thus, as the air service of Canada increases there will always be a supply of highly trained experts to staff machines.

Record of a War Industry

Like an echo of the Great War in a period when the Dominion is just emerging from the economic maelstrom in which the Titan conflict plunged her, comes the report from the Dominion Bureau of Statistics of the Canadian explosives industry for the year 1918 and its record of the meteoric career of what rose to be for the time, an important Canadian industry to wane as rapidly as it had risen.

During the year 1918 when the pinnacle of the munitions industry was attained, this order of manufacturing accounted for a capitalization of \$54,112,884 and a production of \$186,034,980. Eleven firms were manufacturing explosives in Canada, of which five were in Ontario, three in British Columbia and three in Quebec. The total investment of all the firms engaged in the industry was \$19,172,539, an aggregate of 4,959 persons being engaged receiving in salaries and wages \$6,420,847.

Among the materials used in the manufacture that year were nitrate of soda to the extent of \$3,000,000; mixed acids to more than \$2,000,000; linters to more than \$1,500,000; nitric acid \$1,500,000; pyro \$2,500,000; and sulphuric acid, oleum, toluol each to the extent of \$1,000,000. Among the more important products were general explosives to the extent of \$30,000,000; smokeless powder \$5,000,000; dynamite \$4,500,000; and mercury fulminate \$500,000.

An Investment of \$19,000,000

Three establishments made matches and two made fireworks in Canada in 1918, the total assets of the five firms being \$2,364,289, the number of persons engaged in the manufacture being 617, receiving \$368,468. The total cost of the materials used amounted to \$788,182 and the value of the year's output was \$161,795.

The value of imports into Canada of materials for the manufacture of fireworks and matches totalled \$2,594,448 and in the manufacture of explosives \$7,139,254. Finished products of the explosives industry imported for consumption in Canada totalled \$634,522 in value in the year. Exports of manufactured goods during the same year were as follows:—gun and pistol cartridges, \$232,634,973; explosives and fulminates, \$40,108,383; sulphuric acid, \$165,579; charcoal, \$3,841.

The manufacture of explosives in Canada in 1918 involved an investment in plant and equipment of over nineteen million dollars, with expenditures of almost seven million dollars for wages, and accounting for a production of forty-three million dollars. The magnitude of the industry is also reflected in the fact that over five million dollars was spent in the last year of the war in the construction of new buildings and nearly an additional million dollars in general expenditures.

Co-operative Marketing of Wool

A virtual revolution has been wrought in the wool industry of Canada in the past few years. Whereas but a short while ago the wool produced in Canada was offered for sale in such an unsatisfactory state that the Canadian manufacturer looked with indifference upon the home-grown product, to-day he realizes that Canadian wool compares favorably with that of any other country and more than half of the domestic production finds its way to Canadian mills. Not only is the high quality of the Canadian product appreciated locally now but in the United States and the overseas markets it is now generally recognized that Canadian sheepmen are producing wool the equal of similar classes and grades grown elsewhere in the world. Gradually but surely a reputation has been built up for Canadian fleece wools on the domestic and foreign markets.

By July 15th this year, the Canadian Co-operative Wool Growers, Ltd. had disposed of about one million pounds of the 1921 graded clip. By the end of the season they expect to have handled about five million pounds. This, it is stated, represents about one-third of the wool production of Canada which is significant of the status of the productive industry. In the fiscal year ending March 31st, 1921, more than 7,000,000 pounds of wool were exported to the United States, 130,000 to the British Isles and 30,000 to Newfoundland.

This elevation of the status of the wool industry in Canada by selection and grading has been brought about through the combined efforts of the Canadian Co-operative Wool Growers, an organization of sheepmen and the Livestock Branch of the Dominion Department of Agriculture. To counteract the indifferent manner in which fleeces were treated and marketed, expert wool graders were engaged by the Government for the purpose of grading the wool at certain grading centres throughout the country. This policy was followed for the first few years until last year when it was found advisable to have all the grading done under one roof and a warehouse was erected at Weston, Ontario, for the purpose. Canadian grades are now established standard in every particular, and have proved satisfactory in every way.

Shipments to English Markets

The United States market has always furnished an excellent outlet for the Canadian wool crop and a large portion of each season's clip has found its way across the border. This year, however, this egress is closed by the passing of the Emergency Tariff Bill. No apprehension exists, however, over the sale of this season's clip, the Canadian product having rapidly achieved an excellent reputation overseas. Last year the sheepmen of Canada, through their own organization, made their first shipments of graded wool, some 130,000 pounds, to the English markets where it was received most favorably. Consequently, it is hoped and anticipated that British manufacturers may take a substantial portion of that quota of the crop which went annually to the United States. The organization is also arranging at the present time, for a suitable firm of wool brokers to act as a selling agent for Canadian wools on the Canadian market.

The co-operative marketing of wool and general organization for betterment of sheep raising in Canada which has made the pursuit of the sheepman in Canada so much more profitable, has aroused a new interest in the industry, exhibiting new possibilities and opportunities not hitherto apparent. The number of sheep is increasing steadily in every province as more and

more farmers are convinced of the advisability of adding a small flock to their stock. From 1915 to 1920 the sheep population of the Dominion increased from 2,038,662 to 3,720,783. Greater interest yet will doubtless be evinced in the future with the opportunities of grading and marketing, and the rising reputation of the Canadian product where good wool is appreciated.

Outlook in Western Canada

By John Sweeting, Industrial Agent, Western Lines, C.P.R., Winnipeg.

Western people are beginning to be more sanguine as to the possibilities of fall trading. The dead level of the past few months is now showing a tendency upward and reports from commercial men tell that buying, while not large in volume, is consistent, brought about by the belief that for the present at least, no break of any magnitude is likely to take place in the price of commodities and also by the fact that stocks are low and must be replenished. There are possibilities of good fall buying for although some districts have spoiled crops from various causes, yet the total volume will be large and the purchasing power of the West should be on a par with most years to take care of the people's requirements. There will be a good many unemployment problems to be solved as winter approaches, from the present outlook, rather more so than is usually the case in Western Canada, but on the other hand there are possibilities of development along various lines that may considerably ameliorate the situation.

Western cities have already started to make a study of the situation and are intending to get together with a view to a programme dealing with any difficulties that may arise. I am inclined to think that the problem is being approached in the right way and that the West will have little difficulty in taking care of requirements.

In British Columbia, the mining people are talking better times in that industry. Reductions in cost of supplies and labor has led to more activity after a 10-months period of stagnation and mines that have been closed down are re-opening or likely to re-open in the near future. Sales of copper, lead and zinc to China and Japan has helped to relieve the stock of unsold metals: coal mining has been more brisk and there appears to be a better demand for materials used in construction. There are possibilities for large expenditures in mining machinery, buildings and equipment and the outlook generally, appears to be in much better shape than for some time past. Apples, grain and hay crops are good, somewhat above the average, and whilst lumber production has mostly been for export, the mills have been kept running and it is quite likely that the prairies will demand a considerable amount during the fall months.

Construction and Immigration

In the Prairie Provinces construction this summer has been at a minimum. It is difficult to say whether some improvement will be shown during the fall or not. Capital is not available apparently for such purpose. There has been a fairly large number of residences built under the housing schemes but there are still many thousands to be constructed to take care of requirements.

Immigration, in view of the various restrictions, is necessarily of small volume, but we are getting a good class of agriculturist and home maker, who is adaptable to Western requirements and of great advantage to the country.* Moreover, enquiries show that the present period of inactivity is temporary and that many thousands of people are awaiting a favourable opportunity to settle in Canada and to invest capital in this country.

It appears to be reasonably sure that the next twelve months will show a marked revival in all lines, the begin-

ning of another great flow of prosperity in which the West will largely share new markets as new channels for trading are being opened up. Efforts are to-day being made by various organizations of producers to take care of Empire requirements with apparent success and this movement is likely to bring stability in prices, a freer movement of merchandise and a more elastic scheme of credits.

The outlook is certainly encouraging and there does not appear to be any reason to doubt that conditions are shaping towards better business, more construction and greater development with an era of prosperity at no great distant date.

Wild Life in Nova Scotia

The Maritime province of Nova Scotia, one of the earliest settled regions of the Dominion and long past the worry attendant upon the development of more recently explored and youthful areas, offers nevertheless, a peculiar combination of the calm, cultivated mien and leisurely progress of the old world with the primitive untamed wilderness where wild life follows out its existence for the greater part unmolested by the advent of man and where conditions are as unchanged and natural as when the first discoverers arrived at the Atlantic shores. Whilst these wilds have attracted the trapper, the hunter and the sportsmen as well as hosts of tourists, to the serious menace of extinction of the province's wild life, vigorous precautionary measures and methods of conservation have been adopted to ensure their preservation. This has resulted in a maintenance of numerical status in practically all species and in the case of certain species occasioning considerable increases, despite the heavy annual toll taken.

As a big game country Nova Scotia is eclipsed only by its sister, New Brunswick, and each year sportsmen from all over the continent are attracted to its woods in large numbers. Receipts from the sale of licenses in 1920 amounted to \$4,843, practically all of which were non-resident, indicating the wide favor of the hunting grounds of the province. The moose reported killed in the 1920 season numbered 1,361, an increase of 96 over the previous year and of 120 over the kill for 1918. Deer killed in 1920 numbered 125, a decrease from the previous year's record of 198 which was however, abnormally high as can be seen from a comparison with 1918's bag of only 69. No trace of cariboo were reported last year except in the extreme north of the province and it may be assumed, according to the game wardens, that they are practically extinct further south.

Domestic Ranching Increasing

Any diminution of the fur supply is adequately guarded against in Nova Scotia by the establishment of domestic ranching which is ever assuming greater proportions. It may not be generally known that this has become a thriving

industry and in the matter of silver-black foxes ranking only second to its neighbor, Prince Edward Island, the home of this branch of the industry in Canada. At the end of 1920 licensed fox farms totalled 102. There were in addition 12 mink farms, 8 muskrat ranches and one each beaver and skunk farm.

The total number of animals reported by farmers for 1920 was 1,434, showing an increase of 483 over the figures of 1919. The number of silver-black foxes in captivity at the end of the year was 570, an increase of 308 over the number reported for the previous year. Despite the war-time decline in the industry there are now three times as many silver-black foxes in captivity in the province as were reported for any year before the outbreak of hostilities.

Many Varieties Exported

The total revenue accruing to the province from licenses, fines, and the sale of permits in 1920 was \$8,415, whilst about \$500,000 would be realized at the prices prevailing last year from fur skins exported during the twelve months, which allowing for those shipped or carried out of the province and not reported, would augment this amount considerably. Among the more important skins exported were 11,348 weasel, 28,626 muskrat, 2,056 red fox, 2,626 mink, 231 cross fox, 409 silver-black fox, 1,220 raccoon, 46 bear, 66 lynx, 1,288 skunk and 125 otter.

With her important fishing industry, with the annual wealth of the fruit orchards of the Annapolis Valley, with the extensive coal production of the Sydney field, and the increasing value of its allied steel industry, Nova Scotia is extensively developing her very diversified natural wealth. Not least among these natural assets must be reckoned her woods and forests preserved in all the wildness and beauty of their primitive state, and their tributaries the domestic fur ranches. The one maintains one of the finest hunting grounds on the American continent and the other supplements the efforts of conservation in insuring against any possible diminution of the province's supply of wild furs.

Across Canada—Fredericton

Fredericton, in New Brunswick, is perhaps the least widely known of the Canadian provincial capitals, even the governmental centres of the newly developed Western provinces having, in their rapid and meteoric rise, eclipsed this old world legislative seat in attracting the gaze and attention of the outside world. Fortune decreed that the trans-continental lines in their construction should pass at some little distance by the historic little city, leaving it, an inland centre of a Maritime province, on a tributary connection, away from the main routes of trade and commerce, to bloom in all its natural beauty of situation and environs, the

governmental centre of one of the oldest of Canada's provinces.

The site on which the city stands, on the magnificent St. John river about eighty miles from its mouth, was in its earliest known existence, an Indian camping place. At a later period it became occupied by an Acadian settlement and was known as St. Anne's. The province of New Brunswick was formed in 1786 and the first governor, Thomas Carleton, made the little town its capital under the name of Fredericton. So it has continued to this day expanding in dimensions as its beauty has enhanced, progressing serenely in a mellowed old-world atmosphere redolent of the leisurely, the literary and scholarly.

Fredericton is, of course, of first importance as the seat of the provincial government, all legislative matters pertaining to its people and its enormous wealth of lumber, fisheries, and other resources revolving about it. It is also a renowned educational centre, the seat of the University of New Brunswick, the provincial normal school, a military school and fine high and public schools. A Dominion Experimental station has been established and operated for years here for the benefit and assistance of provincial farmers, for there is a very fine farming area, capable of more extensive development, in the St. John valley immediately tributary to the city. The city has a population of 8,000.

Manufacturing Activities

Industrially it is not insignificant, though this important phase of activity has always existed subservient to the calmer aspects of provincial life. The city's industries account for a capital of \$6,631,834 and an annual output of more than three million dollars. Among its manufacturing activities are to be noted grist mills, canoe and motor boat factories, boot, shoe, larrigan, and shoepack manufactures, lumber mills, woodworking plants, and tanneries.

The nature of these industries, apart from the exploitation of the province's rich heritage of timber, at once gives the index to Fredericton's attraction for the outside world, which is to the hunter, tourist and traveller. The city is situated in the centre of what constitutes a veritable paradise of a hunting ground. Sportsmen and fishermen are drawn to its unexcelled big game and superb fishing from all over the world, and Fredericton is the starting point for innumerable parties annually travelling up the St. John river.

On the backwater of industrial and commercial turbulence, Fredericton is one of the most attractive seats of Canadian provincial government, a city of wild and cultivated beauty, a residence of exquisite leisure and calm serenity, a harbor of literary and student minds where generates the leaven which permeates every phase of Canadian national life.

Canada's Greatest Need

By T. E. Sedgwick.

Canada is an outstanding example of the effects of population and the Province of Manitoba is but a smaller epitome of the effects of distributing the British people over the British Empire. The production, development and advance of the country have always proceeded parallel to the increase of settled population. When there were no people settled on this vast territory there were no cultivated areas, no manufactures, no exports, no roads or other artificial means of communication and no accumulated wealth. Now in practically half a century all this has been reversed by the efforts of the migrating British and other races who have settled here.

Some Objections

Some people still imagine that the fewer the people the better off they are. They should compare the difference between Manitoba, or even Winnipeg, in the year 1894, when the Prince of Wales was born, and now. Then the immediate effects of increased population at once will become apparent. Such persons have a right to object to the incursion either of races which have lower standards of living and will not easily fuse with the predominant race of the people. They also may legitimately object to people being encouraged to come here on false assurances of unscrupulous persons that the earth will give her increase without much effort from the cultivator and that urban situations await all new arrivals.

The mere possession of the property qualification of \$250 on arrival is no antidote to the harm that such people may do to the welfare of those already here. At the same time equal evil is wrought on the employment of the community and the development of the Province and of the Dominion by the exclusion of persons for whom there are permanent opportunities of employment which cannot be filled locally.

Scientific control of population places the right man in the right place at the right time. This is of benefit to the people at large as it distributes the debt between more tax payers, increases the earnings of the railways and makes more employment for others already settled in the Province.

Means of Increase

The foundation of Canada, as we know it now was immigration, or as it is now called, Imperial migration. The British people cannot migrate into an Empire of which they already form a part. When they emigrate to foreign countries they are lost to the Empire. When they migrate under the same flag, they become more effective and consequently of greater Imperial value than before.

Natural increase is the subsequent additional method of augmenting the population. This, however, takes time as people have to be born at least 14 years before they become effective producers, and it is usually ten or more years later before they marry to so become the progenitors of subsequent generations. Migration is however immediate, and being selective, enables the right type of persons to be chosen for the work to be performed. Their advent at a working age also saves the country of destination the cost of their maintenance for the earlier years of their existence. Thus Manitoba receives the result of expenditure totalling over \$1,000, in every lad she gets from Britain. Other financial results of migration will be dealt with in a subsequent article.

Natural Increase

The annual excess of births over deaths can be increased either by increasing the birth rate or by reducing the death rate, or by both means at the same time. This natural increase can be fostered by facilitating early marriages, especially in rural districts; by providing good hospital and maternity treatment, especially for scattered communities; by the provision of decent homes, good water supply and drainage.

The proposed peace work of the Red Cross in Canada is thus deserving of all support, as it helps the Dominion to obtain its greatest need, population, and checks the avoidable losses from sickness, accident, malnutrition and other forms of premature decay.

Density of Population

It is impossible to estimate the present population of the Dominion or of any province until the results of the census now being taken, have been collated and tabulated. In any case the average density of population in Canada does not yet equal 3 persons to the square mile. This may be regarded as better than 1.82 persons to the square mile in Australia, but compared to 33 per square mile in the United States, it is not satisfactory and proves the necessity for a more adequate effort in the future.

At the same time care must be taken to prevent the local standards of living being lowered by the influx of a disproportionate number of persons of any race, or races, having lower ideal of housing, food, clothing, comfort and hygiene. Otherwise the local population will be swamped in a very few generations. As a general rule it may be allowed that races of inferior standards multiply more rapidly than do others of higher standards, and as the standards of living advance the number of descendants per family decline in sympathy. This has been the experience of all civilization, both ancient and modern.

Double Population Every 25 Years

America in its early days under the British flag doubled its population every 25 years and in some states duplication was effected in 15 years. As her standards of living have advanced, her rate of natural increase has fallen. Were her white population to remain stationary her 10,000,000 black people if they only doubled in each generation would in 4 generations, say 100 years, show 80 million coloured against 95 million whites. America has depended largely on immigrants and their descendants in maintaining the preponderance of the white inhabitants.

All migration is economic pressure of population on the local means of subsistence and volume of employment. Canada should thus realize the need for increasing her foundation population as far as she is able, especially from the British Isles.

The Cost of Railway Executives

In a little sheet called "Talking Points" issued periodically by the Central of Georgia Railway, some very interesting data regarding the "huge salaries" of railway executives is discussed as well as comparative figures given for operation costs of 1917 and 1921. As the subject is one of interest to Canada as well as the United States at the present time, the article is here reproduced.

Occasional references to "huge salaries" that are alleged to be paid to railway executives may, unless corrected, have the effect of creating an erroneous impression in the public mind. As a matter of fact, out of every dollar expended by the railways in 1920, executive and general officers received less than one cent. Therefore, if these executives and general officers had served the railways free, the amount saved thereby would have been, comparatively speaking, very little, certainly not enough to have an effect upon either freight or passenger rates.

To be sure, there are high-salaried executives and general officers in the railway world. It is safe to say that they earn their money and that their compensation would be even larger were their energies devoted to other lines of endeavor requiring like ability and imposing equal responsibility.

To be exact, the average salary of general officers in 1920 was \$5,542; that of division officers, \$3,319. The average pay of passenger locomotive engineers in 1920 was \$3,310—only \$9 less than that of division officers.

In order to secure the services of men of ability and ambition, railways must give an opportunity for them to earn incomes comparable with other kinds of business and professional activity. If railways are not efficiently developed and managed, their services will deteriorate, and consequently, become more expensive to the public.

Wage Reductions

The public prints recently have placed much emphasis upon the huge sums that will be saved to the railroads by the 12 per cent. cut in wages authorized by the Labor Board. Headlines teem with big figures, such as \$400,000,000 and other sums that stagger the imagination and are really beyond the comprehension of the average mind. So much has been said that the public may lose sight of the fact that all of these "savings" and "reductions" and "decreases" are yet to come instead of actual.

Here are some figures from the other side of the sheet:—

It is now costing the Central of Georgia Railway Co. \$487 per month to repair locomotives, as compared with an average cost of \$187 in 1917. This is an increase of 160.4 per cent.

It is now costing an average of \$17 per month to repair freight cars, as against \$5.81 in 1917. This is an increase of 192.6 per cent.

The average revenue for handling each passenger in 1917 was \$1.03. In 1921 it was \$1.59, an increase of 56 cents per passenger or 54.3 per cent.; while the operating expenses per passenger increased from 71 cents in 1917 to \$1.55 in 1921; an increase in expense of 118.3 per cent.

The operating revenues from each ton of freight handled, increased from \$1.32 in 1917 to \$2.40 in 1921, an increase of 81.8; BUT the operating expenses for each ton of freight handled, increased from 92 cents in 1917 to \$2.13 in 1921; an increase of 131.5 per cent.

These figures show why decrease in expenses is absolutely necessary if the railroads are to survive; and why the wage cut of 12 per cent. is merely a relief and not a cure for the transportation situation.

The Canadian Arctic North

In the lamentable ignorance which exists in many other countries regarding Canada, her wealth and resources, and particularly on her climate, hosts of strangers who know not the great land might be inclined to include under the appellation the greater part, if not the whole, of the Dominion, unheeding the fact that there must be a summer of blazing glory behind its consistent world successes in wheat growing, and a bracing spring and fall to commence and terminate a lengthy agricultural season. There are doubtless too, misconceptions on the mighty Yukon territory where for many years a civilization has existed, modern in its every phase, and progressing along the same lines as areas further south.

But there is an Arctic north to Canada, by which is indicated that territory adjacent to, and inside of, the Arctic circle, a region where only superficial exploration has been carried on and for this reason is hedged about with a thousand misconceptions and false impressions. It is indeed a region of cold winters, but also one of exceedingly bright warm summers. It is not the barren waste popular opinion has pictured

it but one of luxuriant verdure and extensive vegetation. It has a wealth of natural resources and other potentialities, a decided future asset to the Dominion. International interest being particularly centered on this northern territory of Canada, it is now appropriate to look into its features.

Nothing has aroused such general and widespread interest in Canada for a considerable length of time as the discovery, last fall, of oil in the Mackenzie River basin, within the Arctic circle. The capital of many countries is being invested in that area; investors and prospectors are flocking thither by every means of transportation; railway and river steamer services are projected; mushroom settlements are springing up all over its expanse. There is every reason to suppose that the strike is not merely an isolated flow, indications all over the area being of the same favorable nature, and there is every confidence that the many companies carrying out prospecting and drilling will meet with the same success.

The MacKenzie River Basin

Knowledge of the mineral resources of the Mackenzie River basin is very imperfect and limited, but sufficient exploration of a specific nature has been undertaken to have encountered many deposits of lignite coal and iron ore, which for exploitation are dependent upon transportation facilities and agricultural development. Lignite of fair quality occurs in the banks of the Mackenzie at Fort Norman in a bed about five feet thick, and iron ore has been found on the Gravel River about four miles above Fort Norman. Another occurrence was observed further north on the Mackenzie about thirty miles south of the Arctic circle; iron ore occurs in the Bear Mountain section in company with deposits of lignite coal.

It may sound absurd to speak of agriculture here, but one might suggest to memory the sceptics who said that wheat would never be grown in the Canadian North-West. The amazing fact might also be pointed out that as far back as 1876 wheat grown by Roderick Mackenzie, brother of the great explorer, at Fort Chipewyan, which is to all intents and purposes within the Arctic circle, carried off the first prize at the Centennial Exposition at Philadelphia. This was in an era prior to the plains of the south coming into prominence as cereal producers and bearing off most of the prizes for the North American continent.

Though fur, at the present time, constitutes practically the sole commercial product of this region, there is every reason to suppose that at some future time, when the millions of acres to the south of it, as yet unproductive, have been brought under the plough, this section will make a name for itself in agriculture. There is no reason why it should not. At present

development of an agricultural nature is limited to the gardens of the fur-trading posts located about 160 miles apart along the Mackenzie. These gardens, however, demonstrate that potatoes and various other vegetables can be grown successfully as far north as the Arctic circle. The surprisingly luxuriant growth that wild grasses attain around the trading posts suggests the possible future development of stock raising. The excellent herd of cattle maintained by the Roman Catholic Mission at Fort Smith for many years, illustrates in the clearest manner, the value of the wild grasses for grazing and the adaptability of the country to running of stock.

A Future most Promising

It requires but little imagination in the face of recent undertakings to foretell the future of the great tundras of the Canadian Arctic north as the greatest meat producing region of the world which will make the palatable and nutritious meats of the cariboo, reindeer and musk-oxen familiar to the dining tables of the globe. Three islands in the waters of the North-West Territories: Southampton, Mansel, and Goat's, each with an abundance of fodder, have been set aside by the government as perpetual breeding grounds for reindeer and musk-oxen. Stephenson, the famous Canadian explorer, has formed a company with British capital and secured a thirty-year grazing lease on the south half of Baffin's land for the same purpose. The North American Reindeer Company has a ranch of 73,750 square miles north of the Churchill River to graze reindeer and cariboo upon for commercial purposes, whilst another large concession of the Northland has been secured by the Hudson's Bay Reindeer Company, a commercial organization with the same aims.

The bleak Canadian north framed in perpetual ice and snow, the monotonous barren tundras of the Arctic circle are fictitious features of long harbored traditions having no substance in fact. This region is one of latent wealth and potentiality, largely unproductive as yet on account of lack of exploitation, but fast being penetrated and forced to utility. Canada has large areas to the south yet awaiting settlement and development and when these are producing to their full capacity, the rich Canadian Arctic regions will come into their own.

An American's Impression of Canada

It is always pleasant to hear nice things said of Canada as they but confirm our own opinion of this country's future. The following letter was published in a recent issue of the *Ottawa Citizen* and speaks for itself:-

Living across the border line all my life, I, like many others, actively engaged there, hitherto have failed to pay much attention to the claims put forth in behalf of Canada as a wonderful country. A five-weeks trip from ocean to ocean over the Canadian

Pacific Railway, has absolutely convinced me that the great future ahead of Canada that is claimed for her by your political leaders and captains of industry will probably arrive much earlier than is looked for by the most enthusiastic booster.

Observations made during my trip have indeed been a revelation to me, as it must also have been to many others. Aside from the marvelous scenery, your vast domain has potential prospects in a commercial sense that cannot fail to materialize. Whether one considers the outlook from the standpoint of mining, agriculture, lumbering, fisheries, or otherwise, a splendid prospect moves into view. And Canada is surely entitled to have these predictions realized. Any other outcome would be unfair to her patriotic sons who are forever doing something to promote the general welfare. Then again, Canada's hospitality is really the last word in that direction. As one who recently was a "stranger within your gates," I know whereof I speak, and am only too glad to lay a little tribute on the altar of Canadian progress. Very truly yours.— J. Frank Howell, New York.

Alberta's New Premier

Another romance of Western Canadian agriculture, additional example of the city boy who made good on the farm, and further proof that success awaits serious, honest efforts on the Western prairies despite inexperience and paucity of wealth is furnished by the story of Herbert Greenfield, who was recently unanimously elected to head the political party of the United Farmers of Alberta when they defeated the existing government and who, when parliament next sits, will be the premier of the Province of Alberta. Mr. Greenfield was generally considered to be the man most eminently fitted for the honor, as a practical farmer of undoubted success who has been long allied with the provincial farmer's organization with a reputation as an able politician.

Herbert Greenfield is an English city boy, born in Winchester, England, fifty-two years ago and spending his youngest and most impressionable years in an urban atmosphere. At the age of twenty-three he came to Canada, lacking the capital necessary for the promotion of any enterprise and altogether minus any experience in agriculture in which, however, he believed his future prosperity lay. He worked as a hired man in Ontario for some time accumulating both capital and experience, and when he believed that his stock of both justified it, he purchased a farm in the west of the province and set about his own career.

The West Drew Him

In 1906 the glamor of the West enthralled him. He wanted a bigger field to expand in, a newer field of endeavor which he suspected lay in the fertile plains which slope eastward from the Rockies. With a superabundant faith in himself and in the promise the West is always extending, he sold his Ontario farm and migrated to Alberta. There he filed on a government homestead and settled down once more to hew his fortune out of Western loam. To-day he is

one of the most prosperous farmers in Northern Alberta and has the satisfaction of realizing that his success has come from his own efforts, aided only by the great soil fertility and excellent climate a bountiful nature has given "Sunny Alberta."

Now he has been chosen for practically the highest honor the province has to bestow, and for the while the destiny of Alberta's people lies in his hands and the future of the famous mixed-farming area in his legislative guiding. The qualities which made him a successful farmer should go a long way to make him the successful premier of a farming province and the career which commenced in Canada as a farmer's hired man can attain yet greater heights.

The Cardston Temple

*By F. J. Cowdery, Dept. Natural Resources,
C. P. R. Calgary.*

Begun in 1913 and now nearing completion is the Mormon Temple at Cardston,—a small town on a Southern Alberta branch of the Canadian Pacific Railway. This edifice, which has cost more than a million dollars to build, is attracting thousands of tourists from all parts of the continent.

The town of Cardston has been the centre of the Mormon faith in Canada since 1887, when a company of immigrants from Utah, induced by the rank growth reaching to a horse-

man's stirrups, made their home there. It is on the highest point in the centre of the settlement that has sprung into existence that this monument of the Mormon faith has been erected.

The first impression of the structure is of a huge pyramid or bell-tent. On closer inspection its beauty and simplicity of design command attention. One of its most striking features is the total absence of all curves, the architect designing entirely in straight lines. The structure is in the shape of a Maltese Cross, 118 feet square and more than one hundred feet in height. The outer walls are of light grey granite and concrete, six feet thick, and this solidarity of construction has been followed throughout.

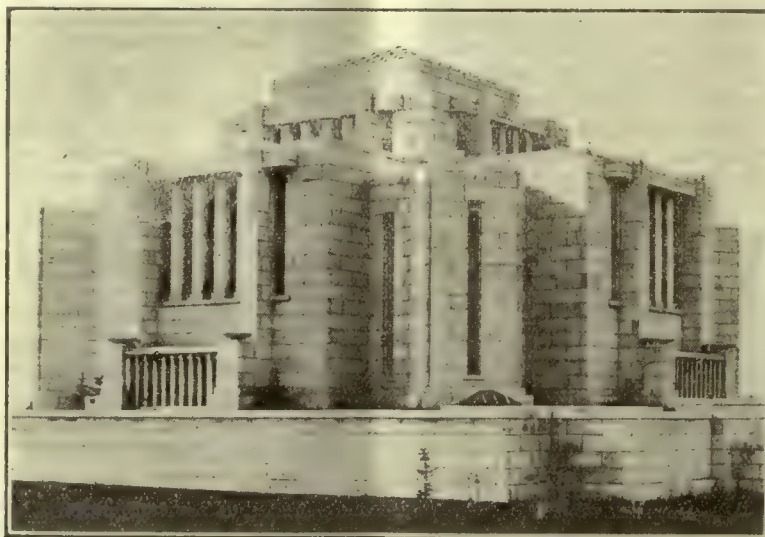
For Ceremonial Purposes Only

It should be mentioned that the purpose of the temple is not for general worship but for the carrying out of certain ceremonies and ritual, such as marriages, ordinations and baptisms. After dedication, the temple may only be entered by Mormons of good standing. Such may not smoke, drink coffee or tea or any alcoholic stimulants. Until dedication, however, all have free access to the building, the uses of which are fully explained to the visitor.

After the cold austerity of the exterior, the richness of the interior decorations afford a strong contrast. The woodwork and panelling is undoubtedly among the finest on the American Continent, while the paintings and mural decorations are by some of the foremost American artists, some of whom have been steadily at work for more than a year.

Facing the main entrance or Assembly room, is the Baptistry, directly in the centre of the building. The huge concrete and marble font here rests on the back of twelve life-size oxen, symbolical of the twelve tribes of Israel. Ascending, the visitor reaches three lecture rooms,

used in connection with the marriage services. These are known as the Creation Room, the Garden Room and the World Room. The first of these is decorated in oak, with ebony and maple inlay. On the walls are portrayed scenes representing the different phases of the creation of the



world from chaos to cosmos. In the Garden Room are depicted scenes from the Garden of Eden, while the wood-work is of bird's eye maple inlaid with ebony and tulip. The third of the lecture rooms is intended to represent conditions on earth after sin and discord entered, and is in direct contrast with the Garden Room. This room is finished in the finest South American walnut.

Terrestrial and Celestial Halls

Ascending still higher is the Terrestrial Room, panelled in African mahogany, where a summary of the lectures given in the previous rooms is given those being married. The final upward step brings us to the Celestial Room, typifying

the Celestial Glory of Heaven. This is of magnificent proportions, forty feet square and thirty-six feet high. It is luxuriously furnished, and decorated with mahogany, onyx and marble. The total cost of this room is \$75,000, the carpet alone involving an expenditure of \$7,000.

Off this lead three small sealing or prayer rooms where some of the finest wood-work in the whole temple is to be seen. These rooms are finished in American or curtain walnut, and can only be described as exquisite.

Although the construction and decoration work is now practically completed, it is not expected that the dedication services will be held until the summer of 1922, as it is intended to give as many people as possible an opportunity of visiting the edifice. At the dedication services, which will most likely last a week, it is believed that some ten thousand people will be present, who will be cared for in a tented city.

In 1920 six thousand tourists availed themselves of this opportunity, and more than that number have been conducted through it this year. It is one of those buildings that it is impossible to describe adequately—it must be seen to be appreciated.

The Labor Situation

A decided upward trend in the volume of employment and decreased cost of living are the most outstanding features of the labor situation in Canada during the month of July. Ontario, Quebec and the Western Provinces report increased activity in railway construction and maintenance, and railway transportation. In the Maritime Provinces there were no unusual developments during the month, while British Columbia advises an increase of activity in lumber mills.

The industries which showed the greatest improvement over the previous month were railway transportation and railway construction. Manufacturing as a whole showed moderate gains. In the iron and steel industry there was some slackness in agricultural implements and heating appliances, sheet metal and tool making plants. The leather industry improved somewhat, more especially in boot and shoe manufacturing. There was little change in the rubber products and textiles industries. In logging the downward movement of the preceding month was checked considerably, due largely to the increased activity in the British Columbia sawmills. Ontario and the Prairie Provinces featured a noticeable increase in railway transportation. Water transportation fluctuated between districts, with a tendency toward lessened activity at Upper St. Lawrence ports. Building construction on the whole showed very little increase in volume, the most notable advances being made in the Prairie Provinces.

Average Cost of Family Budget

The average cost of the weekly family budget covering 29 foods in sixty cities was \$10.98 at the beginning of July, as compared with \$11.16 for June. The total family budget of foods, fuel, lighting and rent in July amounted to \$21.55, as compared with \$21.74 in June and \$26.92 in July, 1920. Decreases were recorded in fresh fish, beef, rib roast, lard, cheese and sugar, while increases were noted in eggs, evaporated apples and prunes.

Loss of time during July from industrial disputes showed a gratifying decrease over the month of June. During the month there were 32 strikes, involving 7,662 work people and resulting in an estimated time loss of 103,554 working days, as compared with 44 strikes, 8,083 work people and 161,910 working days in June, 1921.

Mineral Resources of Alberta

The province of Alberta first attained prominence from its vast cattle and horse ranches and more latterly from its prolific wheat-fields and mixed farms. Sporadic prospecting at all-times revealed the fact that a wealth of minerals lay hidden away, among them coal which amounted to seventeen per cent. of the world's coal supply, and though exploration is now systematic and thorough the field is very wide and new discoveries are continuous, so that it would be a very difficult matter to make an estimate of the extent of this wealth or its value to Canada. A valuable survey has been conducted by Dr. John A. Allan of the University of Alberta, which is published as "The Mineral Resources of Alberta" by the provincial government and which illustrates in a clear and comprehensive manner the variety and extent of minerals to be found in the province, the greater part of which have not yet seen the commencement of development.

Bitumen.—The Alberta bituminous sands, more frequently called tar sands, cover an extensive area along the Athabasca River above and below Fort McMurray. The extent has not yet been accurately determined but outcrops examined show that at least 1,600 square miles are underlain by this formation. The tar sands contain from fifteen to eighteen per cent. bitumen. The subject is treated exhaustively in a pamphlet to be found among the Departmental Publications.

Building Stone.—Rock suitable for building purposes is widely distributed throughout the province, but up to the present time only some of the more accessible sandstones have been utilized.

Clay.—The clay resources of Alberta may be classed among the most important of her mineral resources but up to the present time

the extent and commercial value of these resources have not been investigated in detail. It is known that deposits suitable for the manufacture of various kinds of ceramic products are widely distributed throughout the Province east of the Rocky Mountain escarpment. The value of the production of clay products manufactured increased annually until 1912, when the annual production had a value of one and a half million dollars. The output decreased rapidly after that year, due to the fact that construction for the most part ceased during the period of war.

Coal.—Alberta contains seventeen per cent. of the coal resources of the world and about eighty per cent. of the coal reserves of Canada. Nearly the whole south half of the Province is underlain by one or more coal bearing formations. It has been estimated that Alberta contains an actual reserve of over 386,360 million tons and a probable reserve of about 673,550 millions tons. This makes a total reserve of 1,059,910 million tons within the Province. The production of the year 1920 was 6,908,923 tons.

Copper.—Small pockets and irregular lenses of chalcopyrite are known to occur within the Rocky Mountains along the Bow Valley. It also occurs north of Hudson's Hope on the Peace River. Specimens of bornite, chalcocite, and cuprite have been obtained in the area north of Athabasca and Slave Lakes. Natural copper occurs in the lower part of the Coppermine River which is tributary to Coronation Gulf. Exploration has revealed the fact that in Bathurst Inlet area there are more than 6,000,000,000 tons of rock carrying 1-100 to 1-4 of one per cent. of disseminated native copper.

Gold.—Gold occurs in the gravels along most of the rivers which drain the east slope of the Rocky Mountains. The North Saskatchewan, the Peace and possibly the Liard Rivers contain most important placer gold.

Gypsum. — Gypsum is widely distributed throughout the plains and the MacKenzie Basin north of the Province. Calcium sulphate is also a common constituent of several of the mineral springs of the Province. Gypsum interbedded with clay or limestone has been found along the banks of the Athabasca. Deposits of pure gypsum outcrop along the Peace River.

Iron.—Iron occurs in several forms and at many localities but up to the present time no deposits have been found of such size and quality as to warrant development. There are yet, however, large unprospected areas in Northern Alberta in which iron ores of commercial values may be discovered.

Lead.—Stringers of galena have been noticed in the Rocky Mountains west of Banff but the quantity of this mineral is insignificant.

Natural Gas.—Natural gas is widely distributed. There is an extensive productive area in the South-east of the Province of which the cities of Medicine Hat and Bow Island are the centre. In the Medicine Hat field there are seventy producing wells. The production of the Bow Island field is twenty-nine million cubic feet per day. In 1918 Alberta produced 6,318,389 thousand cubic feet from seventy-four wells, with a value of \$1,358,638. This represented about thirty-two per cent. of the total production of natural gas in Canada.

Petroleum.—Widespread attention is being given Alberta as a possible source of future petroleum supply. Prospecting has been carried on extensively and vigorously with some success. Petroleum was struck in the Okotoks field in 1914 and the approximate production of the Province's petroleum from this field in 1918 was 13,040 barrels valued at \$100,004. The attention of the world at the present time is centered on Fort Norman in the Mackenzie River basin, where oil has been struck and large developments are expected. (Oil prospects and the new field are the subjects of pamphlets issued by the department).

Salt.—Saline springs, some nearly saturated with common salt, occur in the Province. Development is progressing on some of these.

Talc.—Talc is known to occur in the vicinity of Banff in the Rockies, but the extent of the deposit has not yet been determined. The mineral is rather high in lime to be of first-class quality.

Zinc.—Pockets, irregular lenses, and narrow veins of zinc sulphide occur at a few points within the Rocky Mountains. One has been opened near Banff. The quality of the ore is satisfactory but the extent of the deposit has not yet been proven. Other small occurrences are known in the Rocky Mountains to the North-West.

Turning a Liability into an Asset

With most expansive fishing grounds, Canada possesses in her prolific waters some six hundred different varieties of edible fish of which only about one hundred and fifty are known and less than twenty are really important factors on the market. Canada has also in her waters certain creatures of the ocean which are not only non-edible, and from this point of view of no commercial account, but have in addition, to be placed on the debit side of the Dominion's banking account as taking a serious toll of the valuable species, being a continual menace to the fish breeding grounds and constituting themselves general nuisances to fishermen. Such are the mudshark, the dogfish, the hair seal and the sea lion.

It has been discovered that these apparently valueless and pestiferous members of the sea family, whilst having no edible value, possess valuable properties of commercial worth, and considerable attention, especially on the Pacific coast, has been paid of late to their attraction. Commencing with the utilization of whale and fish waste—making use of parts which were previously rejected—this has been followed up by using hitherto worthless members of the ocean family and obtaining a handsome return from their carcasses, at the one time removing a fisherman's pest and giving him returns on that part of his catch which he was in the habit of throwing away.

Sharks can be made to contribute food, gelatines and oil for many purposes as well as being a source of shoe leather. The livers are taken for the oil they contain and this industry has thrived for some time in Newfoundland and Labrador and is progressing on the Pacific coast. The livers are placed in water, cooked by fire or steam, and the oil skimmed off. This oil is of value in dressing leather, soap making, fish glue, paints and for medicinal purposes. The dogfish, which is a smaller species of shark, attains a size of about four feet. It yields oil and a by-product of fertilizer, whilst other properties can also be made to produce. These fish are a considerable source of annoyance to fishermen, making holes in their nets, consuming portions of the catch, and driving away schools the fishermen are following up.

Many Fish Products; Plants

The unsaleable small fish, viscera, heads, etc., of the annual catch in Canada is estimated at about 250,000 tons. Nearly fifty per cent. of the salmon catch on the Pacific coast, seventy-five per cent. of the lobsters canned, and over forty per cent. of the catch of the Great Lakes come under this head. At present only about 1,000 tons are used and this could be largely increased though the greater portion cannot be collected. On the Atlantic coast there are two fish product plants at Canso and Lockeport, Nova Scotia, and one on inland waters at Port Stanley, Ontario, on Lake Erie. The greatest activity in this line is shown in British Columbia and here, judging by the interest of 1920. Whaling companies on the coast have awakened to the value of properties in these mammals which they were wasting, and in addition to the plant which has been operating at Victoria for some time, a whale by-products and non-edible fish industry was commenced on Vancouver Island last year by British capital. Fertilizer, oil and other products to be manufactured from matter previously thrown away are now saved for a steady and profitable market.

At Nanaimo, in the same year, a \$40,000 fish meal and oil refinery with \$15,000 worth of machinery commenced operations with an out-

put of twenty tons daily, five tons of fish producing one ton of meal and fifty gallons of coarse oil suitable for machinery. Only the coarsest kind of fish, dogfish, sharks and other non-edible varieties are used in the manufacture and these are purchased from local fishermen who, in this way, not only find a market for a part of their catch previously worthless, but find it profitable to do this kind of fishing exclusively.

Returned Soldiers Operate Pacific Plant

A company of returned soldiers organized last year for the purpose of getting after the mud shark on the Pacific coast and they have established a thriving industry on Vancouver Island. Oil is extracted and fertilizer manufactured from these hitherto unprofitable encumbrances of Pacific coast waters.

An allied industry which offers substantial and continual revenue for exploitation, and is yet a virgin field, has been advocated by Premier Oliver of the Province of British Columbia. Off the coast of the Province are large numbers of sea lions which destroy annually large quantities of sea food, and the proposition, which has the approval of experienced fishermen, is to slaughter these animals, which weigh from 2,000 to 2,500 pounds apiece, and place their hides upon the world's leather markets. The hides are nearly an inch thick and make tough and durable leather such as is used in workmen's gloves and saddles. Each animal is estimated to consume fifty pounds of fish per day and a bounty of \$2.00 per head has been placed upon them by the Dominion government. Their numbers off the Pacific coast can be realized when hunters on the Charlotte Islands have slaughtered hundreds in a single day.

This industry, utilizing products which would otherwise be wasted, is along the best lines of national economy and as yet merely in the primary stages of development, capable of tremendous expansion. Last year Lord Leverhulme purchased a \$200,000 water frontage on Burrard Inlet, British Columbia, for the erection of a plant for this purpose, which is significant of the wide interest evinced in carrying out this industry in Canada. With the world's most expansive fishing grounds, and some of the most prolific, the fact that they are as yet barely tapped augurs a great future for the fishing industry and, of necessity, the allied industries of their by-products.

Private Forest Conservation

The heavy toll exacted on the forests of the world which has increased so enormously in recent years disclosed the fact, of which but slow and limited cognisance was taken, that the inexhaustible forests of many countries were indeed very capable of exhaustion and their ultimate depletion within sight. Competent au-

thorities for instance, state that the destruction of the spruce forests of the United States, east of the Rockies, is nearing completion and that fifteen years or more at the present rate of consumption will see the end of spruce and balsam. This in a country which possessed one of the greatest reserves of timber a bountiful nature had to bestow, considered at one time unlimited and inexhaustible.

Canada stands in a position at once enviable, and considered in another light, calling for care and forethought. Possessed of far-reaching stretches of valuable timber, constituting some of the richest reserves left in the world, she is the cynosure of timber-depleted countries which have avaricious eyes cast upon her woodland wealth and would, if permitted, in many cases, carry out the same systems of destruction as have left them poverty-stricken in regard to timber possession. The Dominion has, however, the lamentable experiences of these countries to profit by, painful lessons in conservation, which she has taken to heart and instigating governments and private corporations alike to the necessity of preserving the country's rich heritage of timber to posterity.

National Preservation Forethought

Many of the larger corporations, lumber and pulp concerns, who have in their hands the exploitation of Canada's forest wealth for good or ill, have shown a gratifying national forethought in preserving this birthright, treating their woods as a crop to be resown after harvest rather than mines which once exhausted lose all virtue. They have given the Dominion authorities the most active and thorough co-operation realizing that their work is not only a national one, but one which self-interest prompts if they are to go on manufacturing year after year.

There is a steadily increasing movement towards the employment of trained foresters by private concerns, principally pulp and paper companies. Not less than fourteen such companies in Eastern Canada now employ foresters for various woods operations including forest research, nursery work, tree planting or a combination of activities.

A notable work has been done for some time by the Laurentide Pulp and Paper Company at Grand'Mere, Quebec, where this organization has built up a garden city about the scene in their industrial activities, and has in its inevitable destruction retained the beauties of the pristine wilderness. The company has timber holdings aggregating 2,300 square miles under the

surveillance of one of the most competent foresters on the continent, with a regular staff of six men, which at certain seasons is increased to 30 or 40, an extensive and far-reaching system of conservation and reforestation has been carried out. In 1916 nurseries were established on cut-over lands and in the brief period which has elapsed since more than two thousand acres have been replanted. Nearly a million saplings were planted last year, and the aim of the company is to reach a yearly capacity of four million new trees. This keeps the work of replanting well ahead of the cutting operations.

Establishment of Forest Nurseries

Last year the Abitibi Company organized a forestry department in connection with its limits in Northern Ontario. In addition to other lines of forestry work this company has established a forest nursery and has undertaken planting operations. Young trees and saplings are raised in the nurseries, and then transplanted to the cut-over lands there to grow to maturity and provide a crop for the next generation when the operations of this one shall have taken their toll.

Recently an extensive plan of reforesting its timber limits was decided upon by the Chicoutimi Pulp and Paper Company of Quebec. The company obtained the services of the Quebec Forestry Department to make a complete survey of its timber reserves in order to determine the best and most economic method of their exploitation. The company will put no limit on their measures to ensure the permanence of their forest crop, and in addition to the enforcement of the most rigid regulations in conservation and the establishment of nurseries, has sent one of its employees to Europe to study European methods, which are the most successful in the world, and to consult with the best known authorities on the subject.

The field for private forestry is increasing rapidly, as clearly indicated by the growing number of foresters who are going into the work on a consulting basis in response to the demand. Not only the government of Canada but the large timber interests are wide awake to the evils following the wholesale destruction of national timber and not only a public-spirit but a realization of their own best interests has determined them to preserve Canada's magnificent heritage in its present dimension and so make Canada's forest resources truly inexhaustible by putting a tree back where one has been removed.

Departmental Publications

Any of the following publications will be sent free on request.

Alberta, Saskatchewan and Manitoba.—A descriptive statistical booklet on the three prairie provinces with full information on the West.

The Park Lands of Central Alberta.—Descriptive of the area tributary to the Calgary and Edmonton line of the Canadian Pacific Railway in Alberta. History, description of soils, development, lands open for settlement, and information for settlers.

Irrigation Farming in Sunny Alberta.—Full description of Alberta's irrigated lands, their progress, production and possibilities.

Business and Industrial Opportunities in Western Canada.—Full listings of industries existing and business openings in the provinces of Western Ontario, Manitoba, Saskatchewan, Alberta and British Columbia.

Canadian Pacific Reserve Farm Lands in Lloydminster and Battleford Districts.—Information of Canadian Pacific lands in these districts, history, farming information, progress, and possibilities.

Canada's System of Government.—Canadian government briefly outlined to portray its democratic traits.

The Story of Canadian Nickel.—History of the nickel mining industry.

Canadian Oil Exploitation and Prospects.—An expert engineer's history of Canadian oil development and future possibilities.

Canadian Water Power Development.—Authoritative and exhaustive survey of water power reserves and possible development.

Paper Pulp from Flax Straw.—An investigation engineer shows the possibility of the development of a new industry in the West.

A Canadian Grain Handling Plant.—How Canadian grain is stored and shipped. Authoritative article on Canadian elevators.

Value of a Settler to Canadian Railroads.—Computation from reliable statistics of a farming settler's revenue-producing worth to Canadian railroads.

Bituminous Sands of the Athabasca Region.—Description with known values, and possibilities of development of the widely known tar sands of Northern Alberta.

The New Canadian Oil Field.—Dealing with the Arctic oil region of the new strike.

Water Powers of the Maritimes.—Authoritative article on the undeveloped power system of the Eastern provinces.

Water Powers of Manitoba.—The water powers of this province dealt with exhaustively.

Oleomargarine.—History of oleomargarine in Canada and its future prospects.

Lignite Utilization Board of Canada.—Descriptive of the primary operations leading up to the production of briquettes from Saskatchewan lignite.

Taxation in Western Canada.—A comprehensive explanation of the systems of taxation existing throughout Western Canada.

Synopses of Natural Resources.—Forty-five pamphlets dealing briefly but concisely with Kaolin or China Clay, Oil Shales, Mica, Fluor-spar, Asbestos, Molybdenum, Magnesite, Fruit, Flax, Fibre, Nickel, Coal, Clays, Salt, Copper, Zinc, Gold, Pyrites, Iron, Potash, Talc, Feldspar, Platinum, Phosphate (apatite), Manganese, Graphite, Cement, Barytes, Gypsum, Irrigation, Petroleum and Natural Gas, Corundum, Sulphates of Sodium and Magnesium, Timber and Pulpwood, Fish, Fur, Peat, Grazing Lands, Mineral Waters, Building and Ornamental Stone, Whaling, Sealing, Wheat, Oats and Barley, and Water Powers.

To Those About To Arrive In Canada.—A small handbook of necessary and valuable information covering a wide range of subjects of interest to the immigrant.

Motion Picture Films

A print of each of the following films issued by this department is deposited with the representatives listed on the back page. These are available upon application for use by schools, theatres, clubs, societies, boards of trade, and other associations and organizations.

Homemaking by Irrigation.—Irrigation farming in Southern Alberta, the various operations and their results.

The Land of Promise.—Featuring the well-known agricultural section of Battleford, Saskatchewan.

Opportunity.—Illustrative of Western Canadian opportunity, more specifically in the district of Lloydminster, Alta.

Livestock and Dairying.—The fine status and remarkable progress of this industry in Western Canada picturized.

Taming the Last West.—Depicting the evolution of the Canadian West from buffalo range to a modern agricultural area.

The Sunny Side of Rural Life.—The farmer on holiday, showing that life in Western Canada is not all work.

The Evolution of a Grain of Wheat.—The life of wheat seed from the time it is sown until its progeny enters into the composition of a loaf of bread.

Apple Growing in Evangeline's Land.—Orchard cult in the region Longfellow's poem made famous.

The Apple Harvest of the Okanagan.—Gathering and shipping apples in the beautiful British Columbia Valley.

Curing Fish in Nova Scotia.—Depicting the various phases of curing and smoking fish in the Maritimes.

The Canadian Sardine.—The sardine caught, canned and distributed.

Some Water Powers of Eastern Canada.—The beautiful and powerful waterpowers of the Eastern Canadian provinces.

The Silver Fox Industry of Canada.—The domestic ranching of silver foxes in Prince Edward Island.

The Department of Colonization and Development

The Department of Colonization and Development has the following offices established in the United States, Great Britain and Europe, whose representatives, at any time, will be glad to furnish information regarding Canadian agricultural, industrial and commercial enterprises.

MONTREAL, P. Q.	E. G. WHITE, Supt., 335 Windsor St. Station.
WINNIPEG, Man.	J. F. SWEETING, Industrial Agent, Canadian Pacific Railway.
CALGARY, Alta.	M. E. THORNTON, Supt. U.S. Agencies, Ninth Ave. and First St. East.
VANCOUVER, B.C.	E. J. SEMMENS, Trav. Industrial Agent, Canadian Pacific Railway.
NEW YORK, N.Y.	L. F. MOWREY, District Representative, Canadian Pacific Bldg., cor. 43rd St. and Madison Ave.
ST. PAUL, Minn.	J. N. K. MACALISTER, Dist. Representative, Hackney Bldg. 4th and Jackson Sts.
CHICAGO, Ill.	C.P.R. BUREAU OF CANADIAN INFORMATION, 165 E. Ontario St.
SPOKANE, Wash.	R. C. BOSWORTH, Dist. Representative, 705 Sprague Avenue.
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or any agent of the Canadian Pacific Railway Company or Canadian Pacific Ocean Services, in United States, Great Britain, or Europe.

J. S. DENNIS, CHIEF COMMISSIONER,
Department of Colonization and Development,
Canadian Pacific Railway Company.

Ask the Canadian Pacific about Canada.



Agricultural and Industrial Progress in Canada

A monthly review of Agricultural and Industrial progress in Canada, published by the Department of Colonization and Development of the Canadian Pacific Railway at Montreal, Canada.

VOL. 3—No. 10

MONTREAL

October, 1921

An Eventful Month.

EVENTS transpiring during the past month have been of more than usual interest and give solid ground for growing confidence and optimism.

The western crop—on which the eyes of commercial and industrial Canada have been earnestly turned—has proved up to expectations and is being rapidly garnered and shipped. Western railway mileage is already feeling the beneficial effect. Farmers showed an inclination to market their grain early with the result that by the middle of the month over 1000 cars a day were arriving at the head of the Great Lakes; since September 1st, 1920, nearly a hundred thousand carloads of wheat had been unloaded at Fort William compared with fifty-seven thousand for the same period of the preceding year. The early movement of grain has had an excellent effect on Western business and a good fall trade is anticipated.

It is not without significance that the general managers of two Canadian banks have visited the West Indies though the visit was ostensibly a holiday one. Sir John Aird of the Canadian Bank of Commerce and Mr. H. A. Richardson of the Bank of Nova Scotia are both heads of banks whose branches are extensive in West Indian territory. In an interview in the *Jamaica Gleaner*, Mr. Richardson pointed out that it was the policy of Canadian steamship lines to place ships on routes, in the interests of exporters, to all points that promised development in trade relations, and he hoped that shipping interests would receive sufficient encouragement, both from Canadian and West Indian ends, to warrant regular and increasingly frequent sailings.

The Canadian Pacific has extended its ocean services to Italy, to Danzig on the Baltic, and announces winters cruises to the Mediterranean, the West Indies and the Spanish Main with the S. S. Empress of Scotland and S. S. Empress of Britain.

The apple crops in the Okanagan Valley, British Columbia, and the Annapolis Valley of Nova Scotia are record ones.

Annual fall fairs and exhibitions have graphically displayed the improved quality of the country's produce, livestock and manufacture and drawn large, interested crowds. The Canadian National Exhibition at Toronto, opened so auspiciously by Lord Byng, the Governor General, officially declared the largest attendance in its history, whilst fairs at Ottawa, London, Quebec, Sherbrooke and Eastern and Western circuits generally, have reported excellent entries and results.

FUR FARMING GROWS

	1919	1920
Number of Farms.....	419	582
Value of Animals.....	\$3,968,591	\$4,632,605

Fur farming is carried on in every province of the Dominion. There are fourteen ranches in the Yukon Territory.

President Bogart of the Canadian Bankers Association spoke confidently of Canadian business conditions when he said: "I think the most gratifying feature about the situation at present is the active demand in Great Britain and Europe for Canadian foodstuffs. For the next two months more space has been engaged from Canadian ports for shipment to Europe than for many years past. We should look for an early marketing of Western grain and with the proceeds in circulation expect a reduction in liabilities and an increased activity in nearly all lines of business."

Mr. E. W. Beatty, President of the Canadian Pacific Railway, interviewed on his western tour when reaching Winnipeg, predicted a gradual return to prosperity in Canada and affirmed his faith in the soundness of the country.

Agricultural & Industrial Progress in Canada

Published Monthly. Free on request.

It will be appreciated by the Department if editors and writers using matter from this Bulletin will quote source.

Norman S. Rankin, *Editor of Publications.*
E. L. Chicanot, *Asst. Editor.*

Frankly optimistic, he based his statement on the fact that there is an excellent crop in the West; that sound Canadian securities are in good demand, and that, in the near future, the country will have to get on with necessary work that has been held up. "Conditions in Canada are fundamentally sound," he is quoted as having said.

And do not let us forget the dedication of the International Peace Portal—a monument commemorative of the existence of 100 years of peace between this country and the United States. Erected between the small towns of Blaine in the State of Washington and White Rock in Southern British Columbia, the Peace Arch stands half in the United States and half in Canada with a picturesque six acre park around it. Upon it will fly daily, side by side, the Stars and Stripes and the Union Jack, typical of the strong understanding and friendship which, for the past century, has existed along our 3000 mile invisible boundary.

General Agricultural Situation

By J. Dougall, *General Agricultural Agent,*
C. P. R., *Montreal.*

Cutting of grain in Canada is complete. Rains have more or less retarded threshing, but the reports indicate better weather and little damage is anticipated. Light frosts reported in Northern Alberta, but no damage.

Pasture generally throughout the Dominion is in good condition. As was anticipated in our previous report, the crop is thrashing unevenly and the task of estimating a difficult one. The following is the Dominion Government estimate of September 14th for all Canada:—

	1921	1920
Wheat.....	294,387,800 bush.	263,189,300 bush.
Oats.....	466,303,100 bush.	530,709,700 bush.
Barley.....	57,607,300 bush.	63,310,550 bush.
Rye.....	11,847,500 bush.	11,306,400 bush.
Flax.....	7,166,300 bush.	7,997,700 bush.

The three prairie provinces are estimated to yield as follows:—

Manitoba	1921	1920
Wheat.....	37,212,000 bush.	37,542,000 bush.
Oats.....	57,000,000 bush.	57,657,000 bush.
Barley.....	18,488,000 bush.	17,520,000 bush.
Rye.....	2,880,000 bush.	2,318,600 bush.
Flax.....	796,300 bush.	1,157,800 bush.

Saskatchewan	1921	1920
Wheat.....	173,580,000 bush.	113,135,300 bush.
Oats.....	183,863,000 bush.	141,549,000 bush.
Barley.....	13,500,000 bush.	10,501,500 bush.
Rye.....	3,957,000 bush.	2,535,000 bush.
Flax.....	5,420,000 bush.	5,705,000 bush.
Alberta	1921	1920
Wheat.....	60,716,000 bush.	83,461,000 bush.
Oats.....	90,407,000 bush.	115,091,000 bush.
Barley.....	10,732,000 bush.	12,739,000 bush.
Rye.....	2,730,000 bush.	3,420,000 bush.
Flax.....	585,000 bush.	726,000 bush.

The following is the wheat estimate of the Canadian Pacific Railway, at Sept. 15, 1921.

Manitoba.....	39,875,000 bush.
Saskatchewan.....	176,171,000 bush.
Alberta.....	49,247,000 bush.
	265,293,000 bush.

British Columbia.—Conditions generally good. Market not particularly keen although buyers showing some desire for shipments.

Alberta.—Snow has fallen over many parts of the province but no damage reported from frost; 60% of threshing completed in the south and 25% in the north. Threshing will probably commence again in a few days as weather conditions have cleared up.

Saskatchewan.—Cutting is finished with the exception of a few points and for coarse grains. Threshing is general, but has been delayed by uncertain weather. Rain in the eastern portion of the province and snow in north and west. No damage from frost.

Manitoba.—Rain over all the province has delayed threshing and will set farmers back at least a week. No damage from frost.

Ontario.—Conditions in this province have been good, fine weather has been continuous and harvesting complete. Some damage from European Cornborer is reported. The potato crop has exceeded expectation but the apple crop is light.

Quebec.—Fine weather has been continuous throughout the province. Harvesting about complete. Pastures are in excellent condition.

New Brunswick.—General conditions are good. Some demand for potatoes for export.

Nova Scotia.—Conditions good throughout the province. It is estimated that the apple crop of this province will exceed two million barrels commercial grades.

Livestock.—Pastures throughout the Dominion are good and there is sufficient winter feed to carry the stock through. Local conditions in Ontario and Quebec are bad owing to the light rainfall during the summer, but there is sufficient for all requirements by moving feed around. The railways have made special reduced rates for this purpose. The livestock markets are still unsatisfactory and prices offered are very unattractive to the producer. The only class of stock that is bringing a reasonable price is hogs and these are short. Bulls and canners are a drug on the market. Some trade is being done with eastern United States in lambs, in spite of the Fordney Bill.

The export of live cattle to Great Britain is assuming quite large proportions and the Fordney Bill has had the effect of putting Canadian fresh killed beef on the British market. The following figures will give some idea of the move to date as they were shipped in the month of August: 15,248 Canadian live cattle to Liverpool and Glasgow; September will exceed this number.

The United Grain Growers Limited of Winnipeg and the United Farmers Co-operative Company Limited of Toronto, two farmers' companies, are commencing to export to Great Britain direct on October first.

Dairy Products.—The prices obtained for dairy products during the month have been somewhat erratic; the tendency is for lower prices but export demand is good.

Western Canada's Soil Survey

Reports have appeared in numerous papers recently regarding the surveying of soil in Western Canada which is to be undertaken by the various governments concerned. With the gradual diminishing of available lands in close proximity to transportation facilities, attention has been drawn to the need of more intensive cultivation of the land already occupied. This work would be of immense benefit to the country as a whole, and while it will take several years to complete, yet it is felt that time and labor expended will be more than offset by the results.

Saskatchewan has taken the lead over her sister provinces in connection with this work. A representative of the University of Saskatchewan and the provincial department of agriculture has already started work on the preliminary arrangements. Surveys will be made of all agricultural lands in the province, attention being paid to muskegs or swamps with a view to utilizing them for agricultural purposes. An investigation will also be made of the relative fertility of the different classes of soil, and land will be classified according to the type of farming it is best suited for.

Much the same kind of work will be carried out in the neighboring province of Manitoba. The department of agriculture and the University of Manitoba have drawn up tentative plans which will include a survey of the province as regards effect of weather on production; location of dry areas; successful methods of dry farming; location of frost arms; investigation of kinds of crops best suited to them; types of soil in various territories; insect and plant diseases; difficulties met by stock breeders; various types of power used in cultivating small and large tracts of land; and a thorough investigation into rural life.

Alberta to Fall into Line

Alberta has been somewhat backward in this line of work, and to date no efforts have been made to follow the example set by the other provinces. It is confidently expected that Alberta will not be long in adopting a plan of soil survey which will in every way be as complete as those already approved of in Manitoba and Saskatchewan. This summer, however, the federal department of agriculture despatched a party to investigate the possibility of draining the vast muskegs in the north and utilize them for the growing of farm produce.

Experiments on a large scale will be carried out, and, if successful, several rich areas will be thrown open to settlers.

The results of these surveys will be three-fold: (1) they will enable the farmer already on the land to know exactly what crops are best suited for his farm and the methods by which he can obtain the maximum yield; (2) the incoming settler will be able, by consulting the records, to know the merits and demerits of any parcel of land which he may wish to purchase and also the experience and difficulties met by his predecessors in that particular locality and how they were overcome; (3) banks, credit companies, and insurance companies will find the data compiled of invaluable assistance to them when making loans for the development of old or new farms.

Western Canada Irrigation Convention

By James Colley, Secretary, Calgary

One of the most successful conventions held in Western Canada in recent years took place at Vernon, British Columbia, during the last month, when, after a lapse of fourteen years, irrigationists of Western Canada, for the second time, held their annual meeting there, the occasion being the fifteenth annual convention of the Western Canada Irrigation Association.

The main reason for the success of this convention was the excellent program of addresses that had been arranged. The subjects covered engineering, agricultural, economic, legal and administrative aspects of irrigation, and were delivered by able speakers.

In two inspiring and instructive addresses, Dr. John A. Widtsoe, President of the University of Utah, gave some very good advice on the fundamental principles of irrigation farming practice. He told his audience that irrigation should always be, and in a good system of agriculture always was, supplementary to the natural rainfall. Most of the surface of the earth was arid or semi-arid. About one-quarter of the earth's surface received less than ten inches of rainfall annually, and with our present knowledge could be reclaimed only by irrigation. Over another vast area, comprising an additional thirty per cent. of the earth's surface, the rainfall was between ten and twenty inches. On this area the chief extensive crops could be grown without irrigation, but the intensive crops demanded the help of irrigation. Nearly six-tenths of the earth's surface could be re-claimed, if at all, only by irrigation or dry farming. The remaining four-tenths would be helped materially by a system of irrigation.

Water Alone not Sufficient

Dr. Widtsoe advised his hearers not to expect water alone to produce crops. It was

necessary for farmers to till the land in the best possible way. More harm might be done by the use of too much water than too little. Excessive irrigation would cause their land to become water-logged. Just a sufficient quantity of moisture should be kept in the soil at all times to keep the plants growing without being stunted.

He asserted that those who had irrigated farms could not expect to farm rightly and properly, large tracts of land; nor could they expect to farm profitably under irrigation without alfalfa and livestock to put back into the soil the organic matter that was taken out of it by plant growth.

L. C. Charlesworth, Chairman of the Irrigation Council of Alberta, explained the work of that body and the reasons for its creation. Its functions were to supervise the construction and operation of the large co-operative irrigation districts that had been formed, or were being formed in Alberta, whose bonds, by which the funds for the construction work had been or would be obtained, would have the guarantee of the government. The credit of the province had been pledged to the extent of \$4,400,000 by the sale of the bonds of the Lethbridge Northern Irrigation District, the first of these large systems organized. Construction work on this system was now underway, and it was hoped to have water flowing through the canals and ditches in 1923 to irrigate about 105,000 acres of the most fertile land in Alberta.

The Need of Reservoirs

Another important subject that was discussed was the necessity of reserving reservoir sites. William Pearce, who brought this matter before the convention, said that there would come a time, in the not very distant future, when it would be considered a crime to allow any water from our mountain streams to go to the sea if it could, by reasonable outlay, be utilized for irrigation and domestic purposes.

Very valuable addresses were also given by W. F. Laidman, Vernon, and A. Griffin, Brooks, on "Irrigation District Problems;" R. H. Helmer, Summerland, B.C., on "The Growing of Forage Crops under Irrigation;" Professor Barss, University of British Columbia, on "Frost Protection in Orchards;" Professor Wyatt, University of Alberta, on "The Action of Water on Soils;" A. S. Dawson, chief engineer, Canadian Pacific Railway irrigation systems, "Wood Stave Pipe Construction;" A. C. R. Yuill, Vancouver, on "The Construction of Dams and Spillways;" Lionel Stevenson on "Overhead Irrigation as Practised on Vancouver Island;" and G. M. Stewart, Calgary, on "Growing Alfalfa Seed for Market."

Others who addressed the convention were E. F. Drake, Director of Reclamation, Department of the Interior; the Hon. E. D. Barrow, Minister of Agriculture, British Columbia; the

Hon. C. R. Mitchell, late Financial Secretary for Alberta; G. R. Naden, Deputy Minister of Lands, British Columbia, and H. S. Carpenter, Deputy Minister of Highways, Saskatchewan.

The convention was opened by the Lieut.-Governor of British Columbia, the Hon. Walter C. Nichol, and Mr. J. A. McKelvie, M. P. of Vernon, and Senator Hewitt Bostock, of Ducks, B. C., acted as chairmen.

About two hundred and twenty delegates and guests from British Columbia, Alberta and Saskatchewan, as well as from Eastern Canada and the United States, attended the convention, and their comfort and entertainment was looked after magnificently by the people of Vernon.

The Prince of Wales Ranch

By Elizabeth Bailey Price, Calgary, Alberta.

Beyond the first range of the foothills of the Rockies, in the valley of the Highwood River, in the sunny Province of Alberta, is an unpretentious, typical, low ranch house, surrounded by cattle sheds and log corrals. Nestled in the guarding hills of the river valley it has a superb setting. Behind it, westward, rise the snow capped peaks of the Rockies, while on the north and west directly sheltering the house is a grove of Balm of Gilead trees. By this grove flows the Highwood, which, as it races past, never freezes the year round. This stock farm bears the simple name "The E. P. Ranch."

But to Albertans, to Britishers, in fact to the livestock world in every part of the globe these initials have deeper significance. When translated they mean "The Edward Prince Ranch," and this property is, as the name implies, owned by Edward, the popular young Prince of Wales, who purchased it while on that memorial visit to Canada in 1919.

Not a Mere Whim

It was not the mere whim of royalty that caused Edward, Prince of Wales, to purchase a stock farm in Canada. He had a constructive motive. It was the investment of an experienced stockman, for the Prince is the owner of some of the finest breeding farms in England and might well be termed "The Farmer Prince."

The most famous of his English farms is the Stoke Climsland, located seven miles from Tavistock and the headquarters of his Shorthorn breeding establishment. Another is Tor Royal at Princetown, Dartmoor, founded by George IV, whom history chronicles as being Prince of Wales for sixty years, and who in the interim devoted his activities to the breeding of stock. This is the headquarters of the famous Dartmoor ponies.

As Duke of Cornwall the Prince of Wales inherited the Duchy of Cornwall, to which belongs a large number of farms, other real estate and varied industries in Devon and Cornwall, these farms being mostly rented. The Prince has purchased recently the Marsh farm situated on the Bristol Channel, Cornwall, where he has established another herd of Shorthorns.

Reasons for Purchase

There were two inter-dependent reasons for the purchase of a stock farm in Canada. The first was that it would serve as a distributing point for the surplus stock from the English farms, and the next that it would assist, stimulate and improve the great industry of stock raising in Canada by the importation of new and high class strain.

And because the hills about the Bar U ranch, owned by George Lane, appealed to the Prince while on a visit here, and because they reminded him of the hills around Balmoral, he chose a similar location for his own farm.

This resulted in the purchase of what was known as the Beddington farm, located some twenty-five miles south and west of the town of High River.

The farm comprises 1,400 acres of deeded land and 2,600 acres of leased land. There is little broken, and in crop forty-five acres in oats, twelve in sunflowers and two in turnips. All the rest has been left for grazing and meadows.

First Importation of Stock

The first importation of stock arrived in October, 1920, having been 112 days en route, due to the fact that they were quarantined in Scotland for sixty days because of the foot and mouth disease, and an ocean trip of twelve days. In Quebec they were kept thirty days while being inspected and then eleven days of a rail journey to their destination.

Professor Carlyle, the manager, states that in the first importation there were twenty-six Shorthorns from the Prince of Wales' main home farm, Stokes Climsland, all young stock and practically all of his own breeding; eleven Dartmoor ponies from the Tor Royal farm; three racing thoroughbred mares with racing records, and sixty-five head of Shropshire sheep.

Locally there were purchased five purebred Percheron mares from the Earl of Minto Ranch, that popular breed of draught horses for work in this country and bred originally by George Lane, and forty head of commercial cattle, forty steers and forty heifers. This was done not only to give an impetus to the rearing and feed industry of commercial cattle in Alberta but because grass and fodder were plentiful, and owing to the "foot and mouth" disease the importation of purebred stock is difficult.

Some Special Animals

Among the fine imported animals are two herd sires, one bull (a Shorthorn), Climsland Broadhookes, from the Home Farm at Climsland, a splendid dark roan specimen, two years old last January, and another bull, Golden Demonstration, of one of the best Scotch families, bred by James Durno of Scotland, an excellent type.

There are also two particularly fine specimens of Shorthorn females, being Shenstone Colleen, three years old, bred by Sir Richard Cooper and of the famous Jenny Lind family. This animal took second place as a yearling at the Royal Show in England in 1919. Climsland Crocus, the other one, is a beautiful two-year old roan heifer and a winner at the Royal County Show. She belongs to the famous Scotch Crocus family, one of the most popular in England today.

Other famous British families represented are Lady Dorothies, a two year old heifer of the Butterflies family; and the most perfect specimens of Bridesmaids, Gracefuls, Matildahs, Missies, Browith buds and Jealousies.

Their First Winter

The stock-world watched with keen interest how this purebred stock would stand the first Alberta winter. They have all done splendidly, running out all winter; all came through fine and fat without the loss of a single head.

That the Prince's ambition for the improvement of Canadian stock is already arousing interest is shown by the fact that a recent visit was made to the royal premises by the Shorthorn Breeders' Association which held a picnic there. On this occasion the stock was examined, and so successful was the whole affair that the Association decided to make it an annual one.

The Dartmoor ponies, too, have created a wide interest, and Professor Carlyle states that these have been the most productive of enquiries of all the stock. He is constantly receiving letters, and visitors who ride them about the place are eager to purchase; the most frequent question asked is, "Why did the Prince import Dartmoor ponies?"

The reason was a most unselfish one, states Professor Carlyle. When the Prince was en route to the Bar U Ranch he noted the distances between the various ranch

houses and the homes and the schools, which brought to his mind the Dartmoor pony. These he thought, being tough, spirited and yet gentle and economical to keep, would make ideal ponies for Alberta school children, and no doubt the school child to-day, who has become possessed of one, blesses the name of the Prince of Wales.

Increase of Stock

In the spring, there was an increase of eleven Short-horn calves, forty-three Shropshire lambs, the ewes lambing 115%, and two Percheron fillie foals, while eight more cows are expected to calve before January.

In securing the services of Professor W. L. Carlyle of Calgary, Alberta, as manager of this ranch, the Prince has indeed been fortunate in securing a man with wide experience, Professor Carlyle having been twenty-four years in agriculture and live stock work.

Historians of the future may well refer to Edward, Prince of Wales, as the "Farmer Prince," for his practical interest in the world's greatest industry is demonstrated well in the co-joined letters "E-P" which riband the royal stock of Alberta.

The City Man as Farmer

Among the host of people considering immigration to Canada and contemplating settlement upon the Dominion's fertile lands to follow the pursuit of farming, two distinct classes, with diametrically opposing views, loom up noticeably. The one comprises a great number of men who regard farming as an occupation which can be followed casually without regard to study or training, the only profession which requires no preliminary learning, the last resource for the failures of other trades and businesses. The other is that group of sceptics who, going to the other extreme, believe that, having spent all their lives in cities or urban centres, it is impossible to enter with any hope of success or profit upon a farming career in the conviction that a life training, beginning with the earliest years, is imperative, and a constitution inured to physical hardships necessary for what they consider the highly laborious operations of the farm. Both views, so widely divergent, are radically erroneous.

Agriculture in Canada has the status of a profession which both its high standard of operation and the prime place it occupies in national life justify. The days when land was casually filed on and farmed without any intelligent understanding of agricultural processes are going with the dwindling availability of the land, and rapidly passing is the epoch of the destruction of soil values, and the abandonment of farms which have been rendered unproductive. Clearer and clearer has become the realization that farming is a specialized profession requiring special training, and in the place of this spoliation there is an intelligent system of crop rotation, preservation of the virtue of the land, a discovery of the nobility of the farmer's calling and a determination to secure and achieve the best possible in everything.

The Education of the Farmer

Agricultural colleges, experimental farms, government literature, railway propaganda, all in an appreciation of the national benefits which accrue, contribute to the education of the farmer who, if he starts out in ignorance, speedily discovers the futility and profitlessness of continuing in this state. It is only of comparatively recent years that farming in Canada has become the comprehensive and exhaustive study it is and its tenets been so widely absorbed, and older farmers who have followed haphazard method or systems scientifically unsound are gradually forced from necessity into an intelligent study and application of their profession.

This brings us to the city man who is anxious to leave his old life for the greater freedom of the country and take a farm for himself, and, the foregoing holding good, he need not follow far behind the older farmer if he take up the study of his work seriously, bring energy

and intelligence to bear upon a following out of the systems of experienced and successful agriculturalists, and utilize the results of the expert investigation and research the Dominion places at his disposal. The whole country is working for him and the novice has almost an equal opportunity with the farmer of a lifetime.

A census of Canadian farmers would probably show that fully one half are not farmers' sons and were not brought up to the life of the farm. Yet none would criticize Canada's farmers on the score of poor farming methods in general, the excellency of their crops with international honors and the universal demand for their livestock products refuting this effectually. Significant is it too that practically all the farmers who have achieved the most signal honors at international farming competitions have not been lifelong farmers but city men who, taking to the land after reaching maturity without the remotest previous knowledge of agricultural activities, have through intelligent study and close application of the best farming methods surpassed the efforts of those agriculturalists who have continued doing things on the farm in the way their fathers used to do them.

City Boys Greatest Prize Winners

One might mention the Saskatchewan "Wheat Wizzard", Seager Wheeler, who has carried off the world's wheat championship no fewer than six times. The son of fisher folk in the South of England he spent his early years as a book-stall clerk and his farming knowledge was nil when he took a western homestead. The Hill family of Lloydminster, Alberta, which has carried off the world's oats' championship so often were also inexperienced city folk from England when they settled in the West. Samuel Larcombe, of Manitoba, who won the wheat championship two years ago, was also an English city boy. J. C. Lucas, of Cayley, Alberta, who attained the international oat championship at Chicago last year, started life in Stratford, Ontario, and when he took a Western homestead had neither money nor experience. Old farmer Maynard, who ran Seager Wheeler a close second for champion in 1912, was a successful tailor in England before the call of the land brought him out to Manitoba to raise prize wheat. Frank Collicur, the Alberta rancher, whose Hereford herd is restocking many farms all over the American continent, was also a city boy, and when he made his commencement as an agriculturalist had only the wherewithal to purchase one cow, which became the founder of the huge herd of pure-bred Herefords which wander over Willow Springs. Nick Tatinger, the Alberta barley champion, whose crop each year leaves the country at fancy prices, not only had the supposed handicap of a youth spent in a Belgian city, but was minus one arm and capital which would have been useful. Nevertheless he manages to run the farm himself and has made his name internationally famous.

Inexperienced city men need not fear setting out upon a farming career in Canada or anticipate any disaster, as long as they do so in the recognition of the high standing of the occupation, and with the intent of following out its study as such, in which he will find all assistance available. The fundamental reason of the immigration to Canada is settlement upon Canada's fertile tracts, to acquire a piece of mother earth to hold for all time. The inability to secure holdings, or the prohibitive prices of such, have brought peoples to the Dominion not only from the British Isles and the United States but from practically every country in the globe. Nothing is more foolhardy than to commence operations without a rudimentary knowledge of farming, and for this reason men lacking experience should work for a season upon a farm before starting out for themselves. But granted then that a commencement is made in the right direction, with the right idea and the right intent, there need be no apprehension of the success of the ultimate issue.

Canadian Seed Industry

Though unaccompanied by extensive or loud-voiced publicity, Canada has been making a pleasing progress in the production of seed both for a rapidly developing domestic consumption and an expanding export market. Whilst this industry may not feature yet in the public mind as distinctly Canadian and so be nationally important, it is a fact, perhaps not generally known, but supported by the most expert authorities and borne out by exhaustive research and experimentation, that Canadian seed is second to none and that grown on the fruitful soil of the Dominion assures greater propagation and larger and more sturdy crops than that brought to maturity on other parts of the American continent.

With Canadian farmers consistently carrying off the highest honors for the production of cereals on the continent it is but natural that the successful growers should receive a demand from a wide area for their prize-winning product, and so far their sales have been limited only by the amount of seed available for export. Seager Wheeler, the Saskatchewan "Wheat Wizzard", for instance, has no trouble in disposing of his record-breaking wheat at \$30 and higher per bushel, whilst the grain of other Canadian winners of international honors has had the same demand and has gone all over the continent to raise the standard of those areas.

With Canadian agricultural progress and the greater publicity achieved and markets secured through the efforts of the government departments of Agriculture and Trade and Commerce, the export trade in pure seed has witnessed a steady and sturdy growth, and the figures of 1920, recently published, indicate that a considerable step in advance of the previous year have been taken. In the wide export field shipments have increased very largely to the United States, Great Britain, France and Newfoundland. Clover alone accounted for shipments aggregating about half a million bushels with a value of five and a half million dollars and to Ireland alone approximately 100,000 bushels of flax fibre seed worth \$1,000,000 were exported. In British Columbia field root and garden vegetable seeds amounting to 150,000 pounds were marketed through the United Seed Growers Ltd.

Encouraging the Home Agriculturalist

The work performed for the home agriculturalist was even more important. For instance, 75,000 pounds of mangel, swede turnip and field carrot seeds grown by Experimental Farms were sold at current wholesale prices to farmers organizations and individual farmers, it being deemed advisable to confine the marketing of this seed to Canada so that Canadian farmers might have the exclusive advantage of using

this high quality product. Demonstrations conducted with this seed on 117 farms in Ontario and Quebec resulted in showing the superiority of home grown seed over the foreign. Seed laboratories are now maintained by the Dominion Department of Agriculture at Ottawa, Winnipeg, and Calgary, and at these points some 28,000 tests were carried out and grain examined for vitality.

Whilst the industry in Eastern Canada has been on a firm and substantial basis for some years through the efforts of individual farmers and those of the Experimental Farms and much seed has been produced for distribution among farmers, Western Canada has of late years proved itself to possess the qualities of soil and climate peculiarly adapting it to this interesting side of agriculture, and this area bids fair to surpass all other parts of the continent in this regard and become its premier seed producing area. As merely an example of the supreme qualities of this region might be mentioned the hundred bushels of six-row barley which was imported into Alberta from Idaho in 1916, where the variety had been grown and improved on for a number of years and was known as the highest yielding barley in the state. Sown in Southern Alberta on a twenty acre patch it produced seventy-five bushels to the acre, and later sown on the Dominion Experimental farms at Lethbridge and Lacombe the phenomenal yields of 109 and 114 bushels respectively were obtained, surpassing by a great percentage the best ever achieved in its native state.

Alberta offers splendid opportunities for pure seed production on a large scale, according to the best experts. Wheat, oats, barley, peas, flax, rye, alfalfa, sweet clover, red clover, timothy, brome grass, western rye, and seeds of many kinds of vegetables can be grown in different parts of the province in profitable quantities and of exceptional quality. Last spring seven seed centres for the multiplication and distribution of pure seed were established in the province, and it is estimated that this fall there will be between 75,000 and 100,000 bushels of pure seed in Alberta. In the irrigated district of Southern Alberta particularly, success has been achieved in the growing of seed, more especially alfalfa, yields of fourteen bushels to the acre having been received.

Thriving in British Columbia

In British Columbia the production of pure seed is a thriving industry which is yearly becoming more profitable, and on the Pacific Coast flower seeds are grown extensively and exported to all parts of the world. In certain coast districts of the province, seed houses have established farms or arranged with local farmers to grow flower seed for the English and continental markets. The previously prev-

alent belief that English grown seed was superior in producing power to that grown in Canada has been exploded as a result of extensive experimentation, and now, in contrast to the importation which took place at one time into Canada, the Dominion is exporting heavily to the British market.

When Canada can produce crops which surpass other countries, as judged by international contests and exhibitions, it must naturally follow that the seed from which these crops spring be of superior quality. That they are recognized as such is evidenced by the wide demand for seed which exhausts the supply of prize-winning stock each year. With the extension of growth this industry must become of yet greater national importance to Canada.

Industrial British Columbia

The inauguration of a Made in British Columbia campaign, which has been enthusiastically taken up by the people of the Pacific Coast province and secured a large and ever increasing following, draws attention to the progress of industrial manufacturing in British Columbia which, from its expansive and diversified growth, is now in a position to supply from within its own confines nearly all the needs of its four hundred thousand population. Industry on the Canadian Pacific coast is making sturdy and continuous headway, backed by all the fundamental necessities of development in its rich and varied natural resources, its powerful water resources, and its excellent shipping. In the last fiscal year British Columbia exported goods to the value of \$83,558,649 as against imports to the extent of \$81,615,288.

In industrial importance British Columbia ranks third among the provinces of Canada, following Ontario and Quebec and taking the lead by a substantial margin of the Canadian West. According to the returns of the last industrial survey which was conducted in 1918 there was at the end of that year a capital of \$244,697,241 invested in manufacturing industry in the province. The various industries represented gave employment to 44,039 people who received in salaries and wages amounts totalling \$50,422,163. The cost of materials utilized in the plants was \$109,403,517, and the year's production was \$216,175,517. Though no figures have been published since that date there has been a substantial progress made since that time.

Forests and Fisheries Progressing

The industries which spring from the province's chief resources in her very varied natural wealth naturally loom up in greatest importance, those which are tributary to her forests, her fisheries, her seaboard, and her fruitlands. In 1920 there were 567 logging firms in British Columbia which gave employment to 11,250 persons who received in excess of \$15,000,000 in wages and salaries. Allied to these were 385 saw and shingle mills employing 12,645 people who received also about \$15,000,000 in wages. Still tributary to the forests were 61 planing mills and wood working plants finding employment for 1902 people and paying them more than \$1,500,000 in the year. The leasing and exploitation of all accessible pulpwood limits in the east has driven manufacturers to the practically untouched resources of the Pacific Coast, and already there are six pulp and paper mills in full operation in that area. Though this industry is in its earliest infancy 2,000 men find employment in its many phases and it has an annual payroll of \$3,600,000.

As the first fishing province of Canada and possessing the largest salmon fisheries in the world correlated industries are naturally of moment. In 1920, for instance, the salmon pack of the province consisted of 1,177,045 cases, and the canning and packing of fish and fish oil and fertilizer manufacturing gives employment to 15,500 employees who are paid \$13,000,000 annually. There are six whaling stations on the Pacific Coast engaged in the extraction of oil and in the packing of whale meat, and a thriving industry seems to be promised in this section from the business of utilizing the various parts of the sharks which infest the coast waters.

Mining and Agriculture

The mining industry of the province, in which there is a wonderful possibility for the future, is making a healthy growth with an ever increasing annual production. Five firms are engaged in the reduction and smelting of ores, giving employment to more than 1,000 persons and paying them \$1,407,000. Six oil refineries engage the services of 332 persons, their year's aggregate payroll being \$427,000. The iron and steel industry, in which is anticipated a status in the near future of mammoth proportions, already gives employment to 2,500 people who are paid \$4,000,000 in wages.

British Columbia's progress in agriculture has been keeping pace with other phases of the province's advancement, especially in the development of her fruitlands and the production of fruit. An increasing market is yearly being developed as is the preservation of surplus stock through canning. Co-operatively and by private organization this is fast becoming of prime importance to the province. According to the last census there were 45 fruit and vegetable canning factories in British Columbia finding employment for 858 persons and paying them \$956,000 per year.

Shipbuilding is an industry which maintains an important status in the coast province, accounting for a capitalization of \$6,674,530. The various lumber industries account for a capital of \$60,000,000, and pulp and paper for \$32,000,000. Foundry and machine shops and the meat industry are each responsible for more than \$3,000,000, the automobile industry for more than \$1,500,000, and flour milling in excess of \$1,000,000.

Vancouver the Industrial Centre

The province's greatest centre of industry is Vancouver, also its greatest port, the outlet to the markets of Australasia and all the Orient, and the coming point of export for half the Canadian continent. Its activities comprise practically every phase of manufacture which have made it the fifth industrial city of the Dominion. A total of \$98,434,309 is invested in industry in the city; 18,983 are employed in its plants receiving \$21,281,962 in wages; and the annual production in 1918 amounted to \$87,786,041. Other of the province's industrial centres are:—Alberni, Cumberland, Grand Forks, Greenwood, Kamloops, Kaslo, Ladysmith, Merritt, Nanaimo, Nelson, New Westminster, Phoenix, Port Moody, Prince Rupert, Revelstoke, Rossland, Slocum, Trail and Esquimalt.

Realizing that the main hindrance to greater and more rapid development in industry in the province lay in lack of capital, the provincial government some little time ago arranged for an experimental loaning of money to foster industrial concerns in need of such and whose prospects appeared to justify such loans. In 1920 it granted loans amounting to more than \$1,000,000, a total of 362 applications being received of which the majority were rejected. On the word of D. B. Martyn, Deputy Minister of Industries, the experiment has been an entire success, only one failure being recorded, and many enterprises being placed on a healthy financial footing which would otherwise not have been able to achieve flotation.

Though citizens of the Dominion have every reason to be pleased with the status and annual growth of industry in the Pacific coast province, it is difficult to calculate how potentially rich industrially the province is. With a diversity of natural wealth which comprises all needs, the best of shipping facilities and a market which is each year widening in its scope, her industrial future is assured, and at the present day offers the widest possibilities for investment and industrial establishment.

Manufacture of Kraft in Canada

Kraft paper, or as it is better known in its more common form wrapping paper, was first manufactured by a Swede named Muntzing, who discovered what is known as the sulphate process of pulp making. It was not until 1908 that Canadian paper mills began to make this unique product, and then only on a very limited scale. With the entry in 1912 of the Wayagamack Pulp and Paper Company at Three Rivers, Quebec, which specialized in the making of genuine Kraft, the industry began to flourish in Canada and not only were home requirements supplied but a considerable quantity exported as well. No statistics of production are available for the years prior to 1917, but during that year the amount produced totalled 27,000 tons. With the increasing demand and other companies devoting more attention to this line of business the output gradually rose until it reached the record figure of 52,000 tons in 1920.

Kraft is utilized in numerous ways and millions of people daily handle this paper in one or another of its countless fabrications. It is manufactured into wrapping paper, envelopes, marketing bags, wall papers, window blinds, chair seat coverings, bags to contain practically every variety of household foods, twine, and when oiled is the recognized wrapper for all foods of a greasy nature. It has been found to make an excellent substitute for canvas owing to its ability to withhold rain, and even clothing is made from this wonderful product, it being largely used in the manufacture of workmen's overalls, rendering them both water and fireproof.

Used in Manufacture of Munitions

During the war Wayagamack Kraft was supplied to the various munition boards in Canada and the United Kingdom to be utilized in the making of bullets. It was also used in the making of sand bags, which were made from material previously woven from Kraft yarn, and thus the necessary strength required to hold their contents and withstand adverse weather conditions is obtained.

There appears to be no limit to the many and varied articles which this remarkable paper can be manufactured into, and the latest is a corn or cereal cover invented by a gentleman farmer in the south of England. Owing to the un-

certainty of the weather during harvest time in England the farmer stands a chance of losing a considerable portion of his crop from damp and mildew. To overcome this detriment a corn cover was conceived, which is made from Kraft in the shape of a miniature roof capable of covering ten or a dozen sheaves.

The numerous objects mentioned above are only a few of the many things that can be manufactured from Kraft, and suggestions of further ways in which this extraordinary fabric can be put to work are constantly being brought to light. Each year witnesses new names on the already long list of manufacturers of Kraft, and that Canadian paper producers are well aware of the value and importance of this product is attested by the rapidly increasing output.

Canada's Opportunity in Flax Fibre

By G. G. Ommanney, M. I. C. E., Investigation Engineer, C. P. R.

"There is apparently little buying in linen. Purchasers demand lower prices and producers are unwilling to concede them. Nothing, apparently, could be more anomalous than is the situation in which the whole linen industry finds itself. The source of its raw material is drying up. Russia is out of the list of producers altogether, whilst most of the others report crop failures and diminished production. Any serious buying movement is bound to send flax up. Then line, too, will have to go up."

The above announcement, quoted from a recent issue of the Standard Daily Trade Service, has a special significance for Canada as affecting the future of the flax fibre industry.

There is a tendency in some quarters to quote the present temporary stagnation in the flax market as reason for curtailing Canadian activities in fibre production. We believe that the temporary conditions of depression (which at the moment apply to almost every other class of industrial raw material as well as to flax fibre) should not be allowed to affect the broad policy of future development of the industry. Canada's opportunity today is unique.

A clear conception of the tonnage produced by Russia before the war, and no longer available, must show that the moment large scale buying of linen and its allied commodities is resumed and the demand on spinning mills again becomes active an unparalleled world shortage of raw material will be experienced.

Russia produced from 300,000 to 600,000 tons of fibre per annum, or about 76 per cent of the world's supply. Competent authorities think that it will be fifty years before Russia can return to large scale fibre production.

Irrigation Produces Superior Fibre

Consider that a fair average acre yield of fibre is 200 pounds and we see that the Russian area under flax must have comprised the enor-

mous territory of at least five million acres. It has been conclusively proved that irrigated lands in Western Canada will produce a flax fibre superior to the average Russian product. Ontario grows a fibre which has been sold in competition with Belgian line; Quebec and British Columbia have lands and climate eminently suited to this crop. What other country in the world with suitable conditions has to-day the necessary acreage available to meet the vast Russian shortage?

Further, Canadian brains and energy have accomplished more towards the perfection and invention of labor-saving machinery for pulling and handling and preparing flax fibre than has been done in any other country, a fact which will place Canada in a pre-eminently advantageous position for the cheap production of fibre in competition with other countries.

For the above reasons it would seem that a clear realization of the situation and a proper understanding of the relation of present temporary conditions to the future possibilities of this industry should result in immediate preparation for more extensive Canadian flax fibre production in readiness to meet future shortage and keen demand. And further, when that time comes, Canada should be ready to spin her own flax in her own mills and thereby to reap the full benefit of the advantages which she will hold.

New Capital for Canada

The most frequently recurring word in Canadian economic converse is "immigration". It is continually on the lips of the country's statesmen and legislators; it is to be found every day in the editorial columns of Dominion's journals; business men find in it the mirror which reflects the general trend of commercial affairs. The term suggests the history of Canada's wonderful growth in all respects since Confederation; in all that it signifies lies the Dominion's hope and expectation of a development surpassing even this unprecedented record in the next half century.

Canada's interpretation of the word in her national economic life, however, admits of a wider significance than the entry into the country of foreign peoples, and includes the introduction of foreign capital. In agriculture and the successful settlement of the Dominion's vast, uncultivated tracts of fertile land lies Canada's fundamental of progress and future greatness. There must, however, be a corresponding industrial growth with the development of mineral, forest and other natural resources and expansion in the field of manufacturing. To this end capital is needed and the attraction of this necessary factor to national development takes second place in the Dominion's endeavors only to that of increasing

the population by inducing an intelligent and assimilable type of settler to the country.

In the general depression to which Canada was subjected in common with other nations implicated in the Great War and which affected most phases of her national life, it was gratifying to note the resumption of the influx of foreign money which had practically ceased with the outbreak of the war and continued whilst hostilities were in progress. The only difference was that British capital which had previously led in the assault on Canada became subservient in its volume to that of the United States, for the very conditions which militated against the transfer of any substantial amounts across the seas made it decidedly advantageous to send money across the border. It was estimated a short while ago that United States capital invested in Canada amounted to about 1,600 millions, or about one half the total British investment in the Dominion.

United States Investments in Canada

The value of United States investments in Canada during 1920 is estimated at \$320,000,000 made up as follows: new bond issues placed in the United States \$235,000,000; other bonds purchased \$15,000,000; industrial investments \$50,000,000; Western land investments \$5,000,000; increase in assets of insurance companies \$15,000,000. This constituted a record for United States investment, the figures of 1919 being \$200,000,000 and the highest previous figures the \$207,000,000 of 1916. It is estimated that these probably yield an annual return of \$90,000,000, including as they do some of the Dominion's best paying businesses.

The total number of company incorporations with Dominion charters in 1920 was 991 with a total capitalization of \$603,210,850, the greater part of which, without doubt, represents foreign capital. Just how investment in Canada is increasing can be realized from a comparison with the previous year's figures, when there was a total of 512 companies which received Federal charters capitalized at \$214,326,000. In addition to the figures above recorded 88 companies, by supplementary letters patent, increased their capital stock by \$85,187,750. In considering these figures, too, it should be borne in mind that no account is taken of the host of companies incorporated under the charters of the various provinces, all of which have power to grant charters.

The fact that last year, in a period generally considered depressive and one justifying conservatism of action, Canada practically trebled the incorporated capital stock of the previous year and United States total investments nearly doubled, together with the tendency apparent for English incoming capital to assume greater substantiality of volume despite its many handicaps, is just cause for boundless

optimism in the immediate future of Canadian commerce and industry. Indications become more apparent every day of the widespread attraction Canada's resources are exerting and the greater attention devoted to the Dominion as a country for investment. To an ever greater extent the great undeveloped wealth of Canada will draw capital for its exploitation.

Immigrants Travel in State

It is a tradition among Canadians handed down from an earlier generation, but still virile, that one must register horror—as the movie people have it—when speaking of crossing the ocean in the steerage.

As a matter of fact, the tradition is out of date. Indeed coming over in the steerage on a modern liner is more comfortable than coming over first-class used to be on some of the earlier steamships which plied on the ocean ferry.

Nor need the term "they came over in the steerage" longer have the force it once had as one of social opprobrium. Strong, clean-living men came over in the steerage—future Canadian farmers and business men and perhaps statesmen among them—and earnest, clean-living women, and potential mothers of future premiers.

To many of them, intimidated with the old tales of the discomforts of steerage travel, their experience on the voyage across comes as a pleasant surprise. Indeed, steerage de luxe would be a fitting term for third-class quarters on the biggest liners. Particularly is this true if they are so fortunate as to book their passage on any of the larger ships of an old-established line.

For the information of folks ashore, who have never been in the steerage of a ship, it may be well to describe the quarters of the third-class passengers.

Details of Quarters

First in importance are the bedrooms, or staterooms as they are termed aboard ship. These as a rule contain four beds, or bunks, there being two on a side. The beds are framed in iron pipe, fitted with an elastic bottom of metal strips. The bedding consists of mattress, sheets, pillow with slip, blankets and coverlet, or bedspread. Each room has electric light, linoleum floor covering, white enameled walls, mechanically controlled ventilation, and heat when needed.

Next in importance is the steerage dining room. Some ships have two. A third-class dining-room is always large—more than 300 persons can sit down at the tables at once—and it is well lighted and well ventilated. The long tables are covered with neat cloths. Individual swivel chairs permit the passengers to sit at table in comfort, and the food is served on good crockery.

As to the food itself, it is wholesome and abundant. The third-class passengers have their own kitchen which is as clean as the proverbial pin. Every pot and pan is bright and every dresser well scrubbed.

On most large ships the third cabin also has its lounge, or public room, which cuts quite as great a figure in the daily lives of the people who use it as that of first or second class.

Lounge and Cabin

It is a large room with neatly paneled walls, well made benches or settees with curved backs of polished wood, and many small tables at which games may be played or drinks served—for prohibition does not place its restraining hand on the immigrant until he reaches this side of the ocean and he may have his beer or wine at sea when he wants it.

The entertainment of the public room of the steerage usually is informal, and also usually is spontaneous and interesting. On most voyages the conversation is in many tongues, and seldom lags.

The steerage has a piano of its own, and players are never wanting. There is also much volunteer music on the harmonica, mouth organ, accordion and other favorite instruments of the passengers. To such music it is easy to improvise jig or reel, or dance a quadrille; and many a vigorous measure is beat out upon the linoleum floor, or in fine weather the deck, by stamping young feet as the ship drives steadily along through the pathless deep.

A popular feature in the musical programs of the steerage in times past has been the playing of a band composed of members of the ship's fireroom force. A band concert on deck for the benefit of third-class passengers usually is accompanied by dancing. On such occasions the saloon passengers usually gather to see the sport, and a carnival spirit prevails.

It would be an uphill task at such a time to convince anyone on board the ship that a steerage passage is a voyage of gloom. —*Quebec Chronicle*.

Industrial Outlook in Western Canada

By John Sweeting, Industrial Agent, C.P.R., Winnipeg.

A more favorable business outlook and indications of a general bettering of trading exists in the West at the present time. This, it seems reasonable to believe, will continue throughout the fall and early winter months, with a gradual strengthening in the marketing of goods. There is noticeable a more optimistic attitude, the feeling of depression having passed away as the crop outlook developed into a very fair harvest, with in some cases better results than were anticipated. While the general belief in a heavy crop, which looked likely in June, did not actually materialize, the damage from various causes, sufficient to

create pessimistic ideas of crop values, have proved not to have been so detrimental as at one time anticipated. The prairies are in process of marketing a crop that will net good returns and put the Western financial situation on a more prosperous footing. The assistance in the way of loans to live stock farmers on the security of their cattle and possibilities of removal of the British embargo have helped to strengthen the situation.

The question of unemployment is being taken up actively, with possibilities of little trouble in taking care of any situation that may develop during the winter months.

The prairie people are buying more lumber and assisting the situation in British Columbia to some extent, and while the outlook is not altogether as sound as could be wished for that industry in the next few months, changes for the better are possible. The fruit and cereal crops of the Coast Province have given good results and mining shows some improvement.

The Manitoba Power Co. has arranged finances for the new \$10,000,000 plant on the Winnipeg River, which when completed will make available an additional 168,000 H. P. for industrial development. The city of Winnipeg Power Co. has a second transmission line under operation and is in a position to sell an additional 30,000 H.P. The power situation in Manitoba is one of the Province's greatest assets and deserves more attention than has hitherto been given to it. Transmission lines are being built to many of the smaller towns and villages throughout the Province for lighting and power purposes, and eventually practically every point in the Province can be served with this utility. With possibilities of development of over 400,000 H. P. on the Winnipeg River alone, the province has bright industrial prospects.

Activity in Oil, Coal, Mica, etc.

Deposits of mica near Lac du Bonnet have been under investigation and a corporation registered to operate; reports speak well of the deposit, which should be satisfactorily marketed.

At Bienfait, Sask., the coal briquetting plant is now nearing completion and should be in operation in a few weeks.

Oil drilling in Alberta and the north is being continued and much exploration and investigation work is being carried on. Parties coming in from the north appear satisfied with prospects, but it is early yet to state whether any field of commercial value will actually be developed.

Enquiries from intending settlers and investors continue to be received in good volume, while much information is asked for in connection with possibilities for branch factories and wholesale distributing houses. Though active development along these lines has been

to some extent halted during the present year, promise is of good prospects for 1922 and following years. There is little doubt that the industrial development in the West is going to build up, and it is not unlikely that a very considerable volume of new business will make itself evident next year. Indications are pointing decidedly in that direction. It also appears possible that some of the factors that are at present a disturbing element in the world's business affairs are likely to be on a more conservative basis before the year's end and that there will be less perturbation at likelihood of unforeseen conditions after the next six months has passed away.

Water Power Resources of Canada

During the past two years there has been under way in the Dominion Water Power Branch a careful re-analysis and computation of Canada's water power resources. All existing stream flow and power data, available from Dominion and Provincial sources, have been systematically collated, analysed and co-ordinated with a view to preparing on a uniform basis from coast to coast, revised estimates of the power available. While the analysis is not yet finally completed, sufficient progress has been made to warrant the publication of the figures given herein.

While the resources have been exhaustively analysed in so far as the information available will permit, it should be kept in mind that only very meagre data is to hand in many districts and for many rivers.

Basis of Computation

The figures listed in the accompanying table and diagram are based upon rapids, falls and power sites of which the actual existent drop or the head possible of concentration is definitely known or at least well established. Innumerable rapids and falls of greater or lesser power capacity are scattered on rivers and streams from coast to coast which are not as yet recorded, and which will only become available for tabulation as more detailed survey work is undertaken and completed. This is particularly true in the more unexplored northern districts. Nor is any consideration given to the power concentrations which are feasible on rivers and streams of gradual gradient, where economic heads may be created by the construction of power dams, excepting only at such points as definite studies have been carried out and the results made matters of record.

In brief, the figures hereunder are based on definite rapids, falls and power sites, and may be said to represent the **minimum water power possibilities** of the Dominion.

The power estimates have been calculated on the basis of 24-hour power at 80% efficiency on the basis of "Ordinary Minimum Flow" and "Estimated Flow for Maximum Development". The "Ordinary Minimum Flow" is based on the averages of the minimum flow for the lowest two consecutive seven day periods in each year, over the period for which records are available. The "Estimated Flow for Maximum Development" is based upon the continuous power indicated by the flow of the stream for six months in the year.

This estimated maximum development is based upon the assumption that it is good commercial practice to develop wheel installation up to an amount, the continuance of which can be assured during six months of the year, on the assumption that the deficiency in power during the remainder of the year can be profitably provided from storage or by the installation of fuel power plants as auxiliaries.

Available and Developed Totals

The recorded power available throughout the Dominion, under conditions of ordinary minimum flow and within the limitations set out in the foregoing, is 18,255,000 h. p. The water power available under estimated flow for maximum development, i. e., dependable for at least six months of the year, is 32,076,000 h. p. (For details see table attached.)

There are installed throughout the Dominion water wheels and turbines to the extent of 2,471,000 h. p. However, it would not be correct to place this figure in direct comparison with the minimum or maximum available power figures quoted above and therefrom deduce the percentage of the available water power resources developed to date. An allowance must be made for the average ratio between the water wheels installed and the power available.

An analysis of the water power plants scattered from coast to coast, concerning which complete information is available as to turbine installation and satisfactory information as to stream flow, gives an average machine installation 30% greater than the six month flow maximum power. Applying this, the figures quoted above therefore indicate that the **at present recorded water power resources** of the Dominion will permit of a turbine installation of 41,700,000 h. p. In other words the present turbine installation represents only **5.9 per cent** of the present recorded water power resources.

Progress During Past Year

In spite of the outstanding facts that financial and commercial conditions are still far from normal and that costs of construction are almost prohibitive for all but absolutely necessary undertakings, there has been during the past year and is now, marked activity in hydro power construction. This has resulted from a variety of causes, principal among which is the lack of native coal in the central industrial district and the fortunate location of economic water power sites to industrial centres.

The total hydro power development installed during the past year or now under construction represents approximately 560,000 h. p. of installed capacity. This figure includes only the initial installations of plants under construction, not their ultimate designed capacity. It is evidence of the manner in which the water power resources of the Dominion are being put to effective and productive use.

Future Growth in Utilization of Water Power

In view of the increasing appreciation of the advantages of hydro power combined with the fortunate location of ample supplies within easy transmission distance of practically every great industrial centre throughout the Dominion, there is every reason to anticipate that the rate of growth in utilization will be accelerated rather than retarded. Canada possesses sufficient reserves of water power to meet all anticipated demands for many years to come.

In order so ensure the most beneficial utilization of these reserves and to provide intelligent guidance for their development, it is essential that we have an accurate knowledge of the location, capacity and the engineering and economic possibilities of development of the water powers throughout the Dominion, together with their relationship to other natural resources of mine and forest, to industrial centres and opportunities, to transportation systems—rail and navigation, to coal and fuel supplies, to irrigation, drainage and reclamation projects, to alternative sources of power and to market for and uses of power in general.

The water power now developed in Canada represents an investment of \$475,000,000. In 1940, should the rate of growth in installation during the past 15 years be continued, this investment will have grown to over \$1,000,000,000. The present development represents an annual equivalent of 18,500,000 tons of coal which, valued

at \$8 per ton, represents \$148,000,000. In the year 1940 these annual figures will, with the foregoing assumption, have become 42,000,000 tons and \$336,000,000. These figures are striking evidence of the outstanding importance and necessity of an intelligent administrative policy governing the development of our water power resources.

AVAILABLE AND DEVELOPED WATER POWER

Province	Available 24-hour power at 80% efficiency.		Turbine Installation h. p.
	At ordinary min. flow h. p.	At est. flow for max. dev. (Dependable for 6 mos) h. p.	
1	2	3	4
British Columbia ...	1,931,142	5,103,460	304,535
Alberta	475,281	1,137,505	32,492
Saskatchewan	513,481	1,087,756	.....
Manitoba	3,270,491	5,769,444	83,447
Ontario	4,950,300	6,808,190	1,052,048
Quebec	6,915,244	11,640,052	925,972
New Brunswick	50,406	120,807	21,180
Nova Scotia	20,751	128,264	35,774
Prince Edward Is.	3,000	5,270	1,933
Yukon & Northwest Territories	125,220	275,250	13,199
	18,255,316	32,075,998	2,470,580

The above figures may be said to represent the **minimum water power possibilities** of the Dominion.

As illustrative of this the detailed analyses which have been made of the water power resources of the provinces of New Brunswick and Nova Scotia have disclosed most advantageous reservoir facilities for regulating stream flow, and it is estimated that the two provinces possess within their respective borders 200,000 and 300,000 commercial horse power. These figures provide for a diversity factor between installed power and consumers' demands.

Canada's Surplus Buffalo

In 1907 the Canadian Government viewing with alarm the gradual diminishing of the buffalo from the prairies and desiring in some tangible way to preserve these animals from extinction, purchased from Michel Pablo, a rancher in Montana, the largest known herd existing on the continent at that time. In order to accommodate these animals an area of raw prairie, approximately 159 square miles, was set aside at Wainwright, Alberta, as a game park. Since then the buffalo have, under the careful management of the Dominion parks authorities, increased to such an extent that the government now has under consideration the selling or slaughtering of one thousand of them.

Contrary to general belief, the buffalo has thrived under domestication, and at the last census taken March 31st, 1920, the main herd in the Buffalo Park totalled 4,868 by actual count, which is a decrease of forty-one from the previous enumeration. Twenty-one of this number were slaughtered to save valuable hides and heads and twenty died, mostly through injuries caused by fighting. It is estimated

that fully fifty per cent. of the main herd are bulls, and as the proper proportion between the two sexes in a buffalo herd is one bull to every two cows, there are at least one thousand surplus males. This tends to weaken the herd, and with a view to remedying this the government officials decided that the surplus animals should be got rid of.

Creating a Market

To this end investigations were immediately begun to determine the feasibility of marketing these animals. A test lot of mounted heads was sold by auction at the Canadian fur sales at Montreal in March and brought the following prices: small buffalo bull head, \$300; medium buffalo bull head, \$610; and large buffalo bull head, \$1,025. Since the inauguration of the limousine, buffalo robes have not been in very great demand, but nevertheless good hides dressed for robe purposes sold last March in Montreal for \$120 each. Another market not to be overlooked is that of zoological gardens. Many such institutions on this continent and Europe would welcome the opportunity of purchasing a live buffalo, and without doubt the price obtained would be sufficiently attractive to defray all expenses of shipping the animals and leave a considerable margin of profit.

If a ready market cannot be found for the hides it has been successfully demonstrated by practical tests that, when properly treated, excellent sole leather for boots can be made from the hides. The leather is both strong and flexible and it is said to be as valuable as good cowhide. Another product of the buffalo which could be utilized is wool. Although coarser than ordinary sheep wool, it is understood that existing machinery can be adapted to handle this problem. One of the outstanding features of this yarn is its extraordinary strength.

The Meat is Appetizing

The meat of the buffalo can also be disposed of to ready purchasers. Samples of buffalo meat distributed amongst several persons brought forth favorable comments in praise of it, many asserting that it was in every way superior to beef in taste. Without doubt, when the time comes to sell the surplus stock, a ready purchaser will be found.

The salvation of these animals is an example of the profits that accrue from the conservation of the natural resources of a country. For years during the pioneer period of the west the buffalo was recklessly slaughtered, but the government's foresight in purchasing the remaining animals now promises to bear fruit, and where the prospect was that the buffalo would disappear from the plains it is now more than likely that a surplus will have to be disposed of every year, in order to keep the herd up to the highest possible physical standard.

Canadian Fur Auction Sales

During the month of September the fourth sale of the Canadian Fur Auction Sales Company took place at Montreal, when the same gratifying indications of the successful building up of a national fur market as have characterized the previous sales since their inauguration in the spring of 1920 were exhibited. More than one million dollars worth of furs, in the main the product of Canadian traps and ranches, were disposed of, the high quality of the product arousing much comment, and the prices, in the face of general conditions, being considered very satisfactory.

The significant feature of this sale, as of past sales, most pleasing and encouraging to the national movement to build up a Canadian fur market for Canadian furs, was the keen international interest evinced in the proceedings, buyers having arrived at Montreal from London, Paris, New York and most of the fur centres on both continents. Skins, though in the main a Canadian product, had also arrived from all parts of the world, there being consignments from the Southern United States and some having even travelled from far off Afghanistan by way of the Khyber Pass to India on camels, a distance of over 1,000 miles, and thence to Montreal by parcel post.

The pelts offered for auction at the sale comprised practically every animal trapped or farmed for its fur. There were 146 silver fox pelts, mostly from Prince Edward Island, sold at various prices up to the record of \$380, whilst a small selection of white foxes sold at figures ranging round \$40. A total of 24,613 skunk skins, mostly of Canadian origin, found buyers at prices as high as \$5.60, a big advance over the spring prices. Fifteen thousand American opossum and 6,994 Persian lamb skins were featured in the sale; there was a large aggregation of otter and beaver, whilst 3,423 red fox skins brought an average of well over \$30. A collection of mole skins totalled fifteen thousand.

Higher Prices Prevailed

In the opinion of the management the proceedings of the auction were successful beyond expectation. Prices for the better grade of furs were considerably higher than in the spring whilst medium grades maintained their standard. Beaver, otter, fisher, marten, mink and lynx sold uniformly at twenty per cent in advance of spring prices; raccoon had advanced ten per cent, muskrat thirty per cent, and bear as high as fifty per cent. Otter sold for around \$45, lynx \$45, and bear \$22.

The Montreal and Winnipeg fur sales, as periodical events of international interest, may now be considered to be firmly established, and in the secure standing she has achieved, the Dominion has assurance of permanence and

increasing importance for her national fur market. As the world's premier fur producer, both in quality and quantity, Canada has too long lost much of the accruing revenue by permitting the fur crop to go to foreign markets for auction, and the success of her first fur sales evidences that from the long established fame of her products she has no difficulty in attracting to her sales the world's first buyers.

Across Canada—Calgary

The city of Calgary in Alberta recently instituted a competition for the selection of the most fitting slogan to adequately describe it, and as a result the Alberta city is becoming widely known as "The City of the Foothills." The title is both descriptive and distinctive, neatly setting forth its location whilst distinguishing it from other prairie cities. Snugly settled in the shadow of the foothills, the majestic rockies towering above may be seen at practically all times from within its confines, retaining for the environs that suggestion of the primitive and natural from which Calgary is fast removing itself as a modern business and commercial centre.

Calgary is only forty-six years old, the foundation of the future city being a log fort built at the juncture of the two rivers by the North West Mounted Police in 1874. It became the fur trading centre for the Indians, and later its surrounding prairie with the luscious buffalo grass became horse and cattle dotted, raising it to an eminence in the ranching industry unequalled in Canada. Its progress was slow until the line of the Canadian Pacific transcontinental reached it in 1883, when the five hundred people which constituted its population considered the settlement worthy of the dignity of incorporation and it became the "Town of Calgary" with an area of approximately 1,000 acres.

From then on Calgary presents a record of unrivalled progress, passing through the era of the rancher to that of the grain grower and mixed farmer, developing as a grain shipping centre, an industrial hub, the confluence of lines of distribution to the vast agricultural district which sprang up all around it. In 1894 it was incorporated as a city, and today is a handsome, modern city of some 70,000 people with fine public buildings, utilities, banks and hotels, spacious streets, beautiful parks and handsome boulevards.

Calgary is the headquarters of the Department of Natural Resources of the Canadian Pacific Railway from which is controlled the waters that irrigate the vast fertile area commonly known as "The Irrigation Block"—a tract of land approximately 150 miles long by 40 miles wide along the main line of the Canadian Pacific between Medicine Hat and Calgary.

An Industrial Centre

Industrially Calgary is important not only locally but in its relationship to the Dominion, in this respect ranking ninth amongst the industrial centres of Canada. The latest figures give it 230 industrial establishments with 8,685 employees receiving wages totalling \$4,375,609. The amount of capital invested in industry is estimated at \$29,580,639 and the last annual production was valued at \$31,804,133. Its manufacturing activities cover a very wide range and in the main adequately serve that extensive territory of which it is the centre. It has a great meat packing plant, three huge flour mills, thirteen grain elevators, one operated by the Dominion government having a capacity of two and a half million bushels. There are more than two hundred wholesale houses and the city is the terminal of three railway lines. It has twenty-three branches of Canadian chartered banks whose clearings rank sixth among the cities of the Dominion. The export of its meat packing industry amounts to nearly \$4,000,000 annually.

The city is surrounded by deposits of various valuable mineral deposits among which may be mentioned iron, lead, coal, silicate, sandstone, brick clay and shale, pottery clay and fire clay. Oil of a high grade is also found and there has been a substantial production since 1913. Several million dollars are invested in oil wells about Calgary, and at the present time twenty-three rigs are drilling in the area to the south of the city.

Calgary's rapidity of development in every phase has been nothing less than phenomenal. Less than fifty years ago bald, unoccupied prairie, today a modern city in every particular, surpassing in national importance many cities of greater extent on the continent. Since 1910 it has increased its population by half. As the centre round which revolves all the affairs of an extensive area which has already made an international mark in agriculture and is achieving the same in industry a great future is assured for Calgary "The City of the Foot-hills."

Canada's Immigration Policy

By John MacCormac in the Montreal Gazette

Winnipeg, September.—With a railway problem which can be settled only by increased immigration, a financial situation which will be eased only by the opening up of new areas and the further development of the country's natural resources, Canada is today as never before stringently restricting the ingress of even experienced agricultural workers from Great Britain. While this most desirable class of new citizen is being shut out, the country is at the same time receiving a constant addition to its ranks of urban workers in the form of shiploads of European immigrants, for the most part Poles and Slavs. This is the anomaly produced by the well meant efforts of the Government to cope with the present unemployment problem in Canada, and by the creditable spirit of clan-nishness exhibited by certain foreign-born Canadians.

There is, of course, in this free country, nothing against these people either because of creed or nationality, although the preference, if any, might perhaps be given to the British born immigrant. The real objection is an economic one. The class of newcomer who is being shut out of the country for the first time in its history is the very class which the Dominion needs if the West is to continue to develop. It is more particularly the kind of immigrant who must be encouraged if the Western farmer, who is constantly being urged to stop "mining" his land, is to be enabled to follow this advice and go in for mixed farming. The foreigner now being admitted, on the other hand, never goes on the land. He swarms in the cities, where he generally becomes associated with clothing manufacture and trade and makes a success of it. At the best, since Canadian clothing manufacturers have not yet gone in seriously for export trade, he rather lives on the community than helps to develop the country. Just at present, when the cities have a disturbing number of workless men and more in prospect with the winter, he is probably the last class of new citizen Canada is in a position economically to absorb.

Cause of the Anomaly

The writer was in Belgium last year when the first shipload of European immigrants of this type since the war left Havre for Canada's shores. Some criticism of the action of the authorities in allowing the resumption of this traffic was expressed even then in Anglo-Canadian circles. Last year, however, efforts were being made to encourage British immigration, especially of people of the farming class, and a large number of new citizens of this type came over. This year, on the other hand, not only has the Dominion Government absolutely discontinued all its immigration propaganda in the British Isles, but it has discouraged the coming of all but farmers with capital and domestic servants. The unprecedented step was taken of giving the cold shoulder to skilled farm help, even when unmarried. This policy was carried out by official discouragement in the first place and by the enforcement of the \$250 landing money requirement in the second.

It is quite true that the same regulation is being applied in the case of European immigration of the kind referred to. In this case, however, the immigrant manages to put up the money or rather his compatriots in Canada put it up for him. The writer has heard the suspicion entertained that a species of revolving fund for this purpose exists. However that may be, there is no doubt this class, once they are established in Canada, is ready to remember and prepared to assist financially, relatives and friends to join them in the land of opportunity.

"Why won't the Britishers do this?" I asked Mr. Bruce Walker, Director of Immigration Publicity in the West.

"It is because he doesn't like the moral responsibility involved in inducing his compatriots to break home ties," said Mr. Walker. "It is a question into which I have looked, and, while I find our British citizens do not balk at putting up the money necessary to help their friends to come out, it is the moral factor which deters them."

A Curious Situation

The situation is one therefore which redounds credit on Canada's Polish citizens and is in a sense a reflection on her British born. From an economic point of view, however, it is open to question whether Canada in this matter can afford to let the devil take the hindmost. If the country can absorb any newcomer in these days of depression it is the skilled British farm worker. Our policy in discouraging him has been subject to much criticism in Great Britain, and the writer, in the course of a trip through the west to the Pacific coast and back, made its necessity a subject for enquiry. Farmers, members of some of the provincial governments, and even immigration officials who were interviewed expressed some surprise that such action had been taken, and none was prepared to assert that Canada has all the skilled

help it needs. All ascribed as a reason for the policy—and some justified its application on this ground—the desire of the immigration authorities to allow the farms to absorb the workers from the cities.

This is a hope which unfortunately seems bound to be disappointed, judging from what is said in the west. Only a small proportion of the urban unemployed have been willing to accept the forty dollars per month, all found, and all the year round work offered by the farmers. In Winnipeg there seems to be an organized disposition on the part of its jobless to reject work of this kind and deliberately choose rather to subsist at the expense of the city. Railway maintenance and construction is another class of work unpopular with the surplus population of the towns and cities. The Canadian Pacific Railway has had to bring foreign workers from eastern Canada to the middle west and Chinese and Japanese from the Pacific coast to carry on some of its operations.

A class of immigrant favored in some sections has been the American farmer from middle western states, who generally brings with him sufficient capital to work his land without assistance and is on the whole a most successful farmer. The only drawback from Canada's point of view is that when he has attained such success he generally prefers to take the fruits of it back to the United States. The British immigrant, on the other hand, although slower in establishing himself, settles permanently when he does.

Important Problem

The whole subject of immigration bids fair in connection with the railway problem to become one of the most important problems for whatever government will take office after the coming general election. It will also be very much before the administration in the form of the proposal for Imperial migration, assisted by Imperial loans, which was approved in principle by the recent Imperial conference of Prime Ministers. That conference declared that the Dominions were prepared, subject to the sanction of their respective parliaments, to co-operate with the Mother Country to subsidize the migration of the British peoples within the Empire and ask the United Kingdom Parliament to pass an act which would in effect hold out to the Dominions the offer of assistance from the Mother Country in any joint scheme of this kind.

Whatever settled policy is decided on for Canada, there is no doubt that the present condition of affairs, whereby the entry of an economically desirable class of British-born workers is prevented and the influx of an economically undesirable class of foreign workers is allowed, is not commending the Dominion in the eyes of the Mother Country and can scarcely be a factor in the betterment of the present unsatisfactory financial and industrial position of the country.

Canada's Foreign Colonies

In view of the inflow of foreign immigrants to Canada from Europe during the fiscal year 1920-1921, which amounted 26,153, it is of interest to note the origin and destination of those who have already settled in this country during the past decade. These new colonists are mainly agriculturists, and on landing in Canada proceed to various districts throughout the country where their friends or relatives are already located.

The number of European foreign-born in Canada in 1911 was given by the Canada Year Book as 404,941, or 5.62 per cent. of the entire population. It is interesting to know that at the time this census was taken

the number of foreign-born Europeans in Canada exceeded the number of American born in this country by 101,261, or 1.41 per cent. of the entire population of Canada. Since these figures were compiled, European immigration, owing to the war, has dwindled to practically nothing, and as a result the number of Americans who emigrated to this country since then have so swelled the ranks of their compatriots already here, that the present census will undoubtedly show a much larger number of American than European foreign-born in Canada.

At the last Dominion census, 393,320 persons gave their nationality as Germans; 129,103 Austro-Hungarians; 107,535 Scandinavians; 75,861 Jewish; 54,986 Dutch; Italian 45,411; Austrian 42,535; Russian 43,142; Polish 33,365; Galician 35,158; Ruthenian 29,845, while smaller numbers came from the countries bordering on the Mediterranean sea.

Many Foreign Western Colonies

Taking them in order of importance we find that the Germans, as a rule, gravitate towards Northern Ontario and the Western provinces. They keep to themselves very much and have established many fine and well-to-do communities. In Saskatchewan and Manitoba many prosperous farming centres have been established by Germans. Around the towns of Morden, Winkler, Glencross, in Manitoba, and Kaiser and Vonda, in Saskatchewan, large colonies of German farmers have been founded. Austrians and Hungarians, whose mode of living and language are very similar, frequently settle near German communities. A large number of both Austrians and Germans work in the coal mines of Southern Alberta and the gold and silver mines of British Columbia.

The Scandinavians, who are probably the best foreign immigrant we get from Europe, have founded many thriving community centres throughout the Prairie Provinces, more particularly in central Alberta. They are a strong, industrious, and clean-living people. They cultivate their farms intensely and go in very extensively for mixed farming. Their schools are the most modern and up-to-date of their kind in the province, and often after leaving these schools many of the students attend the provincial university, where a diversity of courses is offered them.

The Jews are inclined more to city life than farming and very few if any go on the land, although there are one or two colonies in the provinces of Saskatchewan and Manitoba which have been in existence for several years and from recent reports are very successful.

Southern Europeans

The Ruthenians, Galicians, Poles, Doukhobors, Russians and Dutch are great agricultural people, and it is not surprising to find large

numbers of them on farms in the Western Provinces of Canada. Like the Germans and Scandinavians, they form into little colonies, having their own church, language and schools. Though not as progressive as the Scandinavians they make splendid citizens and as farmers cannot be excelled. At Winnipeg, Manitoba, these people publish papers written in their native language.

The Italian, like the Jew, tends towards city life, but quite frequently they operate small farms outside large cities, on which they grow vegetables and other garden truck to be retailed in the city. They have a successful agricultural colony at Venice, Lake La Biche, Northern Alberta.

During the war many of these foreign-born immigrants from Europe enlisted in the Canadian Army, while a large number of them were reservists in the Allied Armies. Those at home bought Victory Bonds, and subscribed to the Red Cross as well as to various other war funds. They also planted an increased acreage in grain crops in order to relieve the food situation and in many other ways displayed their good citizenship. Many of the pre-war immigrants, such as Germans, Austrians, Hungarians and Turks, are now barred from Canada and it will be some years before the ban is lifted.

The Labor Situation

In the month of August there was a moderate improvement in the employment situation in Canada according to reports received from employers, though the volume of employment was decidedly less than in the corresponding month a year ago. Trade union reports indicated greater activity, vacancies notified by employers noted a gain, and there was also a gain in the number of placements effected. Less time was lost on account of industrial disputes than in the previous month, whilst wholesale prices continued their movement downward. There was a slight increase in the cost of living as indicated in the price of general commodities over the Dominion.

Industrially, activity was evidenced in the Maritimes whilst the reverse situation was experienced in Ontario and Quebec. The Prairie Provinces manifested a steady increase in the volume of employment, conditions being somewhat less favorable in British Columbia. Industries which showed net increases were edible plant products, textiles, coal mining, railway and water transportation, building and railway construction. Smaller net increases were registered in leather goods, wholesale trade, telegraph communication, and hotels and restaurants. Sawmills registered the most pronounced losses in the period under review, 2,068 persons having been released in the four weeks.

Cost of Living Rises Slightly

There were important losses in iron and steel, weakness was shown in shipbuilding, railway car manufacturing, general machinery and agricultural machinery, whilst tools and rolling mills registered gains. Pulp and paper and rubber goods reported pronounced losses, whilst the electrical apparatus manufacturing exhibited a considerably smaller amount of employment. Tobacco made substantial gains. Glass, cement making, asbestos, gypsum quarrying, retail trade, local transportation, logging and telephone operation indicated contractions.

There were in existence during the month some 24 strikes involving about 3,221 work-people and resulting in an estimated time loss of 83,105 working days. In retail prices the cost of a list of twenty-nine staple foods for an average family in some sixty cities rose to \$11.41 at the beginning of August as compared with \$10.96 at the beginning of July, \$16.42 in August, 1920, \$14.43 in August, 1919, and \$7.68 in August, 1914. The chief increases in foods were in potatoes, butter and eggs. Fresh meats were lower.

Maritime Oil Shales

Exploitation and development in the Canadian Maritime provinces go oftentimes unheralded by any great amount of publicity, but because the people of that area have their own modest ideas of unostentatious progression it is erroneous to conclude that little is being done. Steps which have recently been taken to develop the oil shales of two of the provinces have considerable significance for the industrial future of the Canadian Maritimes.

New Brunswick has long been known to geologists, engineers, and interested capitalists as possessing extensive bituminous or oil shales, which exist in the counties of Westmorland and Albert, near Moncton. Though no real attempt has previously been made to make use of them commercially, it has long been known from experimentation that they possess a richer value in oil and by-products than the famous Scottish shales which have been operated very profitably for years. The quantity of the rich shale is practically unlimited and has been estimated by several mining engineers at as much as 270,000,000 tons.

In Pictou county, Nova Scotia, there is an area of about ten square miles estimated to contain 500,000,000 tons of oil shales which will yield a minimum of thirty gallons of oil to the ton, of which fifty per cent is available for motor fuel, the remainder making fuel oil, lubricating oils and greases.

A real system of exploitation and utilization of the New Brunswick field is being undertaken by the Imperial Government through the

Anglo-Persian Oil Company, in which it owns a controlling interest. This organization has entered on operations in an aggressive manner, making a practical test of the shales, their campaign being an elaborate one designed to cover several years. Upwards of \$6,000,000 has been allocated by the company for the purpose of New Brunswick development.

Progress Slow But Sure

At the outset progress is being made in a slow and sure manner. A retorting plant has been erected at Baltimore which has a daily capacity of eight tons. The material as taken from the surface workings is crushed to egg size and great satisfaction has been expressed with the results to date, the average yield being 32.7 Imperial gallons of crude oil per ton of shale. Some idea of the extent of the projected operations of the company and the volume of the shale deposits may be gathered from a statement that later the erection of a 5,000 ton plant is projected which at the average yield noted above should produce about 60,000,000 gallons per annum from the deposits. An authority declares that there is enough shales in the series to supply five plants of 1,500 ton capacity each for fifty years.

During the present year experiments have been carried on with the Nova Scotia shale deposits in Pennsylvania. The shale was shipped in carload lots and worked under the supervision of the owner of the properties and heads of the Dominion Government Fuel Testing division and Mines Branch. The type of retort used had a capacity of from fifty to one hundred tons per day and can be brought up to three hundred or more tons per day for single retorts. With access to the Atlantic and Gulf of St. Lawrence direct from the works, transportation for the oil extract and by-products is ideal.

The Anglo-Persian Oil Company has declared its intention in the building of plants, erection of machinery, etc., to utilize as far as possible the products of the Maritime provinces. The development in Nova Scotia must also have a local benefit industrially. This taken with allied activities and the export of products should make the entry of these companies in the field a reason for yet greater faith in the future of the Canadian Maritimes.

Fish Culture in 1920

In the waters off both her coasts, the inland lakes, her innumerable rivers and lesser water-courses Canada has the most extensive fishing grounds in the world, and she is deeply appre-

ciative of the fact in her endeavors to maintain them in their fruition and prolificness by means of an efficient and comprehensive system of fish culture. Through the work of a branch of the Department of Fisheries and Marine the much fished waters of the Dominion are carefully guarded against any depletion of stock from the toll exacted by sportsmen, tourists, and commercial fishermen. Hatcheries are maintained for reproduction and a systematic examination of all waters and distribution of fry and young fish undertaken.

Fish cultural operations in 1920 were confined almost entirely to the more important commercial food fishes, such as Atlantic salmon in the east, whitefish, cisco, salmon trout and pickerel in the interior, and the Pacific salmon in the West. A large part of the whitefish, cisco, salmon trout and pickerel eggs were obtained from the commercial catch, the department being largely dependant upon the co-operation rendered by, and the success of, the fishermen for such eggs.

The work of the year 1920 comprised the distribution of 910,000 green eggs, 6,394,000 eyed eggs, 733,627,714 fry, 6,622,425 advanced fry, 2,830,001 fingerlings, 1,750 yearlings and older fish, or resulted in replenishing the waters of Canada with the equivalent of 759,386,790 additional fish. There are now throughout the Dominion a total of forty-one hatcheries engaged in the work of the department.

Long Past the Experimental Stage

Fish culture in Canada is long past the experimental stage and its success in maintaining and replenishing the fisheries is beyond question. Its excellent effects are apparent on all sides. Very few salmon were seen in Prince Edward Island streams before the establishment of a hatchery, but now as a result of distribution the waters practically teem with this fish. The Petitcodiac river, New Brunswick, after virtual depletion has carried a good run of salmon for several years past. Systematic stocking achieved the same results on the Nashwaak river in the same province.

Salmon are reported to be getting more plentiful in Nova Scotia despite the heavy fishing, and remarkable results have followed the distribution of speckled trout from the provincial hatcheries. The whitefish fishery of Lake Erie has recovered from a state approaching depletion, Lake Winnipeg records bigger catches than ever, and trout and whitefish have been successfully introduced into British Columbia waters. Instances proving the undoubted success of Canadian fish culture might be continued *ad infinitum*.

Motion Picture Films

A print of each of the following films issued by this department is deposited with the representatives listed on the back page. These are available upon application for use by schools, theatres, clubs, societies, boards of trade, and other associations and organizations.

Homemaking by Irrigation.—Irrigation farming in Southern Alberta, the various operations and their results.

The Land of Promise.—Featuring the well-known agricultural section of Battleford, Saskatchewan.

Opportunity.—Illustrative of Western Canadian opportunity, more specifically in the district of Lloydminster, Alta.

Livestock and Dairying.—The fine status and remarkable progress of this industry in Western Canada picturized.

Taming the Last West.—Depicting the evolution of the Canadian West from buffalo range to a modern agricultural area.

The Sunny Side of Rural Life.—The farmer on holiday, showing that life in Western Canada is not all work.

The Evolution of a Grain of Wheat.—The life of wheat seed from the time it is sown until its progeny enters into the composition of a loaf of bread.

Apple Growing in Evangeline's Land.—Orchard cult in the region Longfellow's poem made famous.

The Apple Harvest of the Okanagan.—Gathering and shipping apples in the beautiful British Columbia valley.

Curing Fish in Nova Scotia.—Depicting the various phases of curing and smoking fish in the Maritimes.

The Canadian Sardine.—The sardine caught, canned and distributed.

Some Water Powers of Eastern Canada.—The beautiful and powerful waterpowers of the Eastern Canadian provinces.

The Silver Fox Industry of Canada.—The domestic ranching of silver foxes in Prince Edward Island.

Departmental Publications

Any of the following publications will be sent free on request.

Alberta, Saskatchewan and Manitoba.—A descriptive statistical booklet on the three prairie provinces with full information on the West.

The Park Lands of Central Alberta.—Descriptive of the area tributary to the Calgary and Edmonton line of the Canadian Pacific Railway in Alberta. History, description of soils, development, lands open for settlement, and information for settlers.

Irrigation Farming in Sunny Alberta.—Full description of Alberta's irrigated lands, their progress, production and possibilities.

Business and Industrial Opportunities in Western Canada.—Full listings of industries existing and business openings in the provinces of Western Ontario, Manitoba, Saskatchewan, Alberta and British Columbia.

Canadian Pacific Reserve Farm Lands in Lloydminster and Battleford Districts.—Information of Canadian Pacific lands in these districts, history, farming information, progress, and possibilities.

Canada's System of Government.—Canadian government briefly outlined to portray its democratic traits.

The Story of Canadian Nickel.—History of the nickel mining industry.

Canadian Oil Exploitation and Prospects.—An expert engineer's history of Canadian oil development and future possibilities.

Canadian Water Power Development.—Authoritative and exhaustive survey of water power reserves and possible development.

Paper Pulp from Flax Straw.—An investigation engineer shows the possibility of the development of a new industry in the West.

A Canadian Grain Handling Plant.—How Canadian grain is stored and shipped. Authoritative article on Canadian elevators.

Value of a Settler to Canadian Railroads.—Computation from reliable statistics of a farming settler's revenue-producing worth to Canadian railroads.

Bituminous Sands of the Athabasca Region.—Description with known values, and possibilities of development of the widely known tar sands of Northern Alberta.

The New Canadian Oil Field.—Dealing with the Arctic oil region of the new strike.

Water Powers of the Maritimes.—Authoritative article on the undeveloped power systems of the Eastern provinces.

Water Powers of Manitoba.—The water powers of this province dealt with exhaustively.

Oleomargarine.—History of oleomargarine in Canada and its future prospects.

Synopses of Natural Resources.—Forty-five pamphlets dealing briefly but concisely with Kaolin or China Clay, Oil Shales, Mica, Fluor-spar, Asbestos, Molybdenum, Magnesite, Fruit, Flax Fibre, Nickel, Coal, Clays, Salt, Copper, Zinc, Silver, Gold, Pyrites, Iron, Potash, Talc, Feldspar, Platinum, Phosphate (apatite), Manganese, Graphite, Cement, Barytes, Gypsum, Irrigation, Petroleum and Natural Gas, Corundum, Sulphates of Sodium and Magnesium, Timber and Pulpwood, Fish, Fur, Peat, Grazing Lands, Mineral Waters, Building and Ornamental Stone, Whaling, Sealing, Wheat, Oats and Barley, and Water Powers.

The Department of Colonization and Development

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J. S. DENNIS, CHIEF COMMISSIONER,
Department of Colonization and Development,
Canadian Pacific Railway Company.

Ask the Canadian Pacific about Canada



Agricultural and Industrial Progress in Canada

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MONTREAL

November, 1921

The World's Second Wheat Producer

CANADA has risen to second place among the wheat growing countries of the world, according to the estimates of the International Institute of Agriculture. With her expected yield of 288,493,000 bushels from the 1921 harvest, she is now surpassed in this regard by the United States alone. The vaunted slogan "Granary of the Empire" has come to justify a greater expansion in signification, for the golden fields of the Canadian West are going a long way towards feeding the people of the entire world.

Canadian wheat and wheat flour are now exported to the United Kingdom, United States, Belgium, British West Indies, France, Gibraltar, Italy, Netherlands, Roumania, St. Pierre and Miquelon, San Domingo, Sweden, Turkey, Venezuela, Bermuda, British Guiana, South Africa, West Africa, Canary Isles, Chile, Cuba, Denmark, Dutch Guiana, Dutch West Indies, Egypt, French West Indies, Hayti, Newfoundland, Norway, Panama and other countries.

The history of the growth of Canadian agriculture and wheat growing forms a marvellous record of consistent progress. In a very short space of time the territory which so many said could grow no wheat has become the second in the world in the quantity produced and the first in quality. Since the Confederation of the Canadian provinces in 1867, at which time the history of Canada as a modern nation may be said to have commenced, whilst the population of Canada has trebled, the value of her field crops has multiplied

twelve times and that of her annual wheat crop nearly twenty times, which is illustrative of the healthy state of agriculture and leaves no apprehension of the country's suffering at the expense of the rural sections in the building of urban centres.

The value of all field crops grown in 1870 was \$111,116,606, and that of the wheat crop \$16,993,265. In 1920 these values were respectively \$1,455,244,050 and \$427,357,300. In 1920 the Dominion obtained for the first time in her history a billion dollar crop, more than trebling the value of the crop grown a decade previously.

Agriculture is Canada's first industry and though other branches of national activity are rapidly increasing in importance, the pursuit of farming maintains a lengthy lead which it will no doubt maintain for many generations to come in spite of the extensive exploitation of resources which assuredly lies in Canada's immediate future.

Of the rich fertile plains of the Canadian West only about one-fifth of the area which has been declared fit for

cultivation is occupied, and roughly, 300,000,000 acres west of Lake Superior await parcelling out into farms and homesteads for the millions of immigrants to come.

The cultivation of this area at the same rate of production would give Canada an annual wheat yield of something round 1,400,000,000 bushels, or twice that of the present production of the entire United States.

Canada's rate of settlement and development is the only determining factor of the time when she will have attained the world's first place as a wheat producer both in quality and quantity.

WORLD'S LEADING WHEAT PRODUCERS.

1921 ESTIMATES.

1. United States.....	756,825,000	Bushels.
2. Canada.....	288,493,000	"
3. France.....	282,493,000	"
4. India.....	246,250,000	"
5. South America.....	212,000,000	"
6. Italy.....	188,128,000	"
7. Spain.....	143,205,000	"
8. Australasia.....	116,000,000	"
9. Africa.....	104,948,000	"
10. Germany.....	100,000,000	"

Agricultural & Industrial Progress in Canada

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It will be appreciated by the Department if editors and writers using matter from this Bulletin will quote source.

Norman S. Rankin, *Editor of Publications.*
E. L. Chicanot, *Asst. Editor.*

General Agricultural Situation

*By J. Dougall, General Agricultural Agent,
C. P. R. Montreal,*

Conditions throughout the Dominion have been good during the month of October. There has been more moisture this Autumn than for many years, especially in the West. The grades of grain have been reduced in many districts, and farmers will receive much less for their 1921 crop than they had anticipated.

Root crops have materially increased from the early estimates. The prairie provinces are offering potatoes in quantities at low figures, and Ontario is now assured of a considerable surplus.

Pastures all over the Dominion are in excellent condition and consequently the yield of dairy products is on the upward trend. Quebec especially will have increase in cheese and butter.

British Columbia.—The apple market has been better and the associations are shipping freely. Prices are saggy on account of export uncertainty.

Alberta.—Threshing may be said to be complete. Grain yields are on the average. The drop in grain prices is causing farmers some anxiety. Fall plowing is making good progress and the ground is in good shape, fifty per cent of the work being complete.

Saskatchewan.—Threshing is completed. Some loss in grades on account of wet weather is experienced and threshing too soon after rain is accountable for other loss. The decline in prices is causing farmers some anxiety. Fall plowing is 50% completed and indications are for an increase in acreage over last year.

Manitoba.—Threshing is complete and fall plowing seventy per cent completed. Indications are that the spring acreage will exceed that of last year.

Ontario.—Good progress is being made with the fall work. The potato crop is turning out much better than had been anticipated, and this with the offerings from the North West is causing the market to drop. In fact at the moment there is a glut.

Quebec.—Farm work is progressing well. At the time of writing rains are constant. Pastures are in excellent condition.

New Brunswick.—Potatoes going forward in large shipments to Eastern American points and the West Indies.

Nova Scotia.—Little export trade for apples. Considerable shipments to Quebec and Ontario points. These are of lower grades and for immediate use. Export business poor.

Livestock.—Prices are, if anything, worse than a month ago. Farmers are holding whenever possible and cannery and poor stock hardly pay to market. Owing to the flooding of the market at Birkenhead with unusually heavy Irish shipments, Canadian cattle could not compete and the export trade had a difficult time.

Butter and cheese markets are bright for producers. Though the market declined early in October it picked up latterly and prices just now are good, with the market taking all offerings.

Rye in Canada

In a well substantiated conviction of the suitability of a large part of the Southern area of the Prairie Provinces to the growth of this crop, and in a realization of the opening for export offered by the temporary halt to much agricultural activity in continental countries, resulting through war conditions in a substantial decline in production, Canadian farmers have, of recent years, been greatly encouraged to grow more rye, the advantages of such culture placed before them through systematic campaigns, and every effort exerted to impart a stimulus to Canadian rye production. As a result of this propaganda the production of this cereal in the past five years has increased more than five hundred per cent and the value of the annual crop grown from less than two million dollars to more than fifteen millions. It has been estimated that Southern Alberta and Western Saskatchewan alone have seeded this year about 850,000 acres as compared with 350,000 acres last year, an increase of about 185 per cent for one year.

In 1915 the production of rye in Canada was 2,486,200 bushels, obtained from an exceptionally heavy average yield of 20.43 bushels to the acre. The value of the marketed crop that year reached \$1,921,200. Little increase was registered in 1916 or 1917, as the average productions were somewhat lower than in the bumper year preceding them. A tremendous jump was, however, noted in 1918, when a yield of 8,504,400 was recorded with a value of \$12,728,600, more than doubling that of the previous year. A further increase to 10,207,400 bushels was noted in 1919 with a value of \$14,240,000. In 1920, 649,654 acres were planted to rye in Canada, yielding an average of 17.50 bushels to the acre, making a total of 11,306,400 bushels valued at \$15,085,650. This year according to estimate, the Dominion is expected to produce a rye harvest of 11,707,400 bushels, whilst as a result of special campaign efforts this summer a vastly increased acreage has been prepared for planting to rye next year.

A Survey of the Situation

It is a fact worthy of notice here that in making a survey of the rye situation in Canada it is found that the Dominion has each year maintained a substantial lead in acreage production over that attained by the United States. There is no exception to this in the past six farming seasons, and the average acre rye production for the six years 1915 to 1920 gives Canada a yield of 17.40 bushels against the United States 14.54, a lead in Canada's favor of 2.86 bushels.

Alberta is Canada's first rye producing province, this famous area of the mixed farm accounting last year for \$4,275,000 out of the total Dominion revenue of \$15,085,650 from this crop. Saskatchewan followed not far behind with \$3,194,000 and Ontario had practically the same

amount or \$3,176,200. Manitoba accounted for \$3,140,100; Quebec \$1,004,000; British Columbia \$279,200; Nova Scotia \$10,650; and New Brunswick \$6,500.

With the increase in production of rye on Canadian farms there has developed a corresponding export trade in this grain which it is confidently expected to yet further expand in the near future. Whilst there were only 263,422 bushels of rye exported from Canada in 1915, this had increased to 2,113,302 bushels in 1920, and another million was added in 1921, the total export being 3,201,430 valued at \$6,231,170. Of this 1,108,789 bushels went to the United Kingdom; 717,086 bushels to the United States; 149,468 bushels to Belgium; 59,069 bushels to France, 128,180 bushels to Germany; 259,459 bushels to Italy; 252,199 to the Netherlands; and 527,180 to Norway.

In addition to this export of the raw product Canada has in the past few years worked up a profitable overseas trade in rye flour. In 1919 the Dominion exported 1907 barrels worth \$25,283; in 1920, 35,786 barrels worth \$297,768; and in 1921, 10,833 barrels worth \$104,613.

Multifarious Uses

Rye has many uses. It is used in bread making, for feeding to livestock, and in the manufacture of alcoholic beverages. In Europe, rye bread forms the staple food of the peasantry, it being estimated that one-third of the European population lives on rye bread as it forms the principal cereal in Belgium, Holland, Germany, Austria and Russia. Rye is inferior to wheat for breadmaking and is not so palatable, but rye meal mixed with wheat flour forms a palatable and appetizing loaf. In the United States about two-thirds of the rye grown is used as food for livestock, and one-third is consumed as bread by the foreign population accustomed to its use. In Canada, also, rye is used for bread by the foreign element, and found invaluable in the fattening of livestock.

Canada is ever exhibiting fresh traits in her agricultural development and turns successfully to the production of crops of all kinds, surpassing through the high fertility of her soil and excellence of her climate, the yields of older areas to the south of her domain. As she has exceeded them not alone in the high quality of her product bringing her international honors, but in average production of wheat, barley and oats, so has she accomplished the same in rye, and is progressing in the direction of making her annual production of this important cereal a really important feature of her agriculture.

The Corn Belt Travels North

A striking feature of the 1921 harvest in the Canadian Western provinces is the quantity of corn to be seen on every hand, adding a novel

touch to the western landscape of a few years ago. The traveller through the countryside encountered on all sides splendid sturdy stands of the growing crop, and later met plots and fields of the tall ripened sheaves ready for the silo and the winter's feed bin. The stalwart growth and excellent yields of the corn of the Prairie Provinces have occasioned exclamations of amazement and admiration from visitors across the line who, dwelling in what are known as the "Corn States," are in the best position to appreciate the wonderful production of Western Canadian soil. In ingrained belief that their territory alone on the continent possessed the properties for successful corn production, their astonishment and marvel can be imagined.

It is not so very many years ago since sceptics said that wheat could never be grown profitably in Canada, and gradually the growth and extension of Western Canadian cultivation saw the wheat belt travel northward in its wake, until now it is generally acknowledged to lie well within the Canadian West, a situation attested by a decade's uninterrupted successes in winning international honors for this crop. Indications would now tend to the assumption that the corn belt is undergoing something of the same process of shifting, and that, in the near future, corn will be a staple crop of the Canadian West, and the Prairie Provinces vie with the corn states across the border in their annual yields. Certainly the excellent crops to be seen all over this territory, and the increasingly large areas devoted to the culture, would demonstrate there is nothing in soil or climate to hinder such circumstances coming to pass.

Amazed at Growth of Corn

The realization of this fact will undoubtedly have a great effect on their attitude towards Canada of United States farmers in whose agricultural activities corn enters as such a large factor, and Canadian agricultural land should be regarded with yet greater favor. Recently, a party of United States farmers visited the Canadian West to look over farm lands with the intention of purchasing and settling if satisfied. They were shown various sections where values ranged from \$25 per acre to \$50 per acre. In the course of their inspection they were amazed and delighted to see the excellent stands of corn as fine, on their own acknowledgment, as they could produce on their highly held lands farther south. Learning the price of the land they exclaimed, "These farms are worth at least \$75 per acre when you can raise corn like this." They were corn farmers and reckoned in terms of corn production. Needless to say they decided in favor of Canada and are now preparing to raise corn north of the line.

Other United States farmers will probably be just as amazed to learn that the Canadian West can raise corn to evoke the admiration of

corn belt experts. The fact that corn is only becoming really popular in the West is due to several causes, one being that devotion to the cult of wheat and other cereals has tended to practically exclude more crops, and another that before the more intensive farming which is becoming the order in the larger portions of the provinces, the wide ranges provided the necessities of pasturage and winter feed.

Certain it is that in the West corn can be grown successfully, and the increasing favor it is finding with farmers augurs the future location of the corn belt much in the same region where the wheat belt is to-day.

Danish Colony in Western Canada

By C. LaDue Norwood, Dept. Natural Resources, C. P. R., Montreal

The Scandinavian people, Danes, Norwegians, and Swedes, are noted for their pioneering instinct, and it is therefore not surprising to find representatives of these races in the vanguard of settlement in Western Canada, and in especially Danes have taken a prominent part.

The Danish people, due to the limited area of agricultural land in the country of their birth, are keenly appreciative of the value of land and its proper cultivation; indeed, they are very good judges of soil and agricultural conditions and make few mistakes in selecting locations for settlement, and where they settle together and follow agricultural pursuits prosperous farming communities soon develop. Individual Danish farmers have located in various parts of the Prairie Provinces of Canada and in some cases, where the first families settled a few years ago, very fine settlements of these thrifty agriculturists have sprung up.

Markerville, Alberta, an early and successful Danish settlement in a fine dairy and mixed farming district, named after Mr. C. P. Marker, one of the first Danish settlers there, who is now Dairy Commissioner for Alberta, and the Innisfail district, may be mentioned. The latter district has become noted for its dairy products owing to the fact that in their homeland the Danish settlers soon discovered the advantages of dairy farming and it was not long before a good creamery was in operation at Innisfail, creating a staple industry and a regular income to the settlers, and through the maintenance of a good number of stock and careful cultivation of the land, a very solid farming community has been established.

An Outstanding Example of Success

Probably the most outstanding example of Danish pioneering and agricultural success, however, is that of the Danish settlement at Standard, Alberta. It was in 1909 that J. H. Myrthu and Jens Rasmussen first heard of the fertile lands of Western Canada, and whilst they were farming good high-priced land in Western Iowa, where their ancestors had pioneered before them, they were beginning to feel the call of the Canadian North-West. Then the desire to investigate the opportunities in the Canadian West grew into a determination and crystalized in the spring of the year when these two prominent farmers decided to make a trip to Canada. After travelling over various parts they decided that the undulating prairies of Southern Alberta was the right place for them and their Danish friends.

Returning home they talked to their neighbors and friends about their plans, with the result that in the fall of the same year a party of about some thirty people arranged to make the trip from Iowa to the new land in Alberta. These men were of the sturdy Danish-American farmer class and as soon as the Canadian border was crossed were at once interested to see everything and miss nothing. No doubt there was a thought in some minds

that a great change would appear when they crossed from the land of the Stars and Stripes to the Land of the Maple Leaf and Union Jack, but there seemed no great difference except that the fields of golden grain were larger and the stooks of grain were thicker.

Their keen appreciation of the productive soil was at once aroused to the opportunity presented to the farmer to make the rich prairie acres pay a handsome dividend, while at the same time the home life for their families would not be materially changed. On every hand they saw progress and prosperity. Big farms, fine buildings, progressive cities and towns, good schools, everything much as they had left in Iowa; the people spoke the same language and many had preceded them from "back home." When the train reached Gleichen, Alberta, a budding Western town, the end of their railway journey, they proceeded by democrat thirty-five miles across the prairie, everyone enthusiastically over the promising future which the new land offered.

To Spy Out the Land

Early the next morning the thirty pioneers, in six double-seated rigs packed with provisions and feed, set out to "spy the land" on their seventy mile trip. Reaching the site of the prospective colony and whilst dinner was being prepared, the Danish minister, who had been invited to join the party, formally dedicated the settlement the "Standard Danish Colony," after which the teams were again requisitioned, the party piled into the wagons, and every parcel of land was carefully inspected and allotted.

This then was the nucleus of the present very successful and prosperous Danish settlement which has won for the district an envied position among the many progressive grain and stock-raising districts which have sprung up during the past decade. Here now are to be seen the comfortable homes and big red barns of wealthy and contented farmers, and the undulating unbroken prairie of 1909, with its picturesque winding trails, has given place to the mile-long furrows, the woven wire fence, and the graded road with the railway penetrating the settlement and the town of Standard at their door.

No Vacant Land Remains

The original settlement, which, through its wonderful record of success, has drawn their fellow countrymen from all directions, has long since overflowed the original township boundaries, extending in all directions, has crossed the Rosebud River to the north, where at Wayne an extension settlement has rapidly grown. Many of these settlers came with limited means to take up land at from \$15 to \$25 per acre, while today, through their energy and determination and the inherent fertility of the soil and favorable climatic conditions, they have built up a community in which their land is in demand by new settlers at from \$75 to \$100 per acre. There is now no vacant land in the Standard Danish Settlement.

Probably no more persistent and uninterrupted record of progress in colonization and agricultural development can be instanced, and the millions of bushels of wheat, oats and other grains, and the thousands of head of livestock produced in this settlement have already created substantial railway traffic such as few districts attain—the ideal state of settlement so much sought after by the Colonization and Traffic departments of a progressive railway.

When this condition is attained throughout the West generally, one can only imagine what Canada's annual agricultural returns will be.

Irrigation Pioneers

The Canadian Pacific Railway Company introduced irrigation into the semi-arid tracts of Southern Alberta, and in the face of profound and general scepticism entered upon the construction of a project in an area larger than any

like scheme on the American continent, covering a territory 150 miles by 40 miles lying on either side of the main transcontinental line. The success has been phenomenal, and the work which the Company did in proving the value, virtually the indispensability, of this method of farming in that area has received its compensation and an eloquent tribute in the wholesale clamoring for irrigation which has followed.

Directly traceable to this success and the general demand on the part of farmers for irrigation facilities is the provincial legislation providing for the establishment of co-operative irrigation districts and the further guaranteeing to the full extent of the bonds of such districts. The several districts in the course of establishment and those on which construction is proceeding, are the outcome of the pioneer efforts of the Canadian Pacific Railway in irrigation farming. Farmers willingly pay from \$40 to \$50 per acre to have their farms irrigated when it is no unusual thing for the increase in production to pay for this the first season after the water is laid on.

Irrigation in Southern Alberta and in Saskatchewan, where somewhat similar provincial legislation has been enacted, is largely becoming a matter of farmers' co-operative organizations. The only private irrigation concern on the prairies in addition to the railway, irrigating and colonizing land, is the Canada Land and Irrigation Company, a company which in its initial organization suffered from the same discredit of feasibility and has seen its work proven and appreciated and is enjoying its success.

The Canada Land Irrigation Co.

The Canada Land and Irrigation Company came into being as the result of the amalgamation of three smaller irrigation companies which owned land in Southern Alberta. A large block of land had been purchased from the Government under the Federal Irrigation Act, and school and Hudson Bay sections within this were bought up. The pooling of the land gave the new company an area of roughly half a million acres, about 200,000 acres of which are considered irrigable. Gradually the area under irrigation is being extended and settlement increasing. Actively commencing irrigation and colonizing operations only a few years ago, ten thousand acres are already irrigated and the greater part settled and productive. By the summer of 1922 the company expects to have fifteen thousand acres inundated and ready for settlement.

The main project of the company is the western or Vauxhall irrigation district, surrounding the town of Vauxhall, about sixty-five miles directly west of Medicine Hat, which altogether contains 94,000 acres of which 50,000 are irrigable. Irrigation water is obtained from the Bow River and carried through two large reservoirs, Lake McGregor reservoir and the Little Bow reservoir, the former with a capacity of

300,000 acre feet and the latter 30,000 acre feet. In view of the splendid crops which the district can produce and the encouragement given to intensive farming, the irrigated land is divided into 80 and 160 acre units, farmers being urged to take the smaller plots.

The average yield of crops per acre obtained on the project has been very high. Over the past six years an average of 3.47 tons per acre has been maintained for alfalfa; 46 bushels of wheat; 94.72 bushels of oats; 61.28 bushels of barley; 44.26 bushels of peas; 368.43 bushels of potatoes; and 14.86 tons of sugar beets.

In vastly increased production the great benefits of irrigation have their strongest proof, and in proving this the Canada Land and Irrigation Company has done its share.

Goat-raising in British Columbia

Goats in the Province of British Columbia now number approximately 5,000, according to a statement issued by the Provincial Department of Agriculture. Practically all of these animals are of the Toggenburg, Saanen and Nubian breeds. When first introduced into British Columbia it was predicted that goats were but a passing fad, but such has not been the case, and to-day goat-raising occupies a recognized position in the livestock industry of the province. While no other province in the Dominion has entered into this industry so extensively, the demand for these animals in British Columbia still continues unabated.

The original foundation-stock, numbering some 200 head, entered Canada in 1917 from the United States, when they were examined by Federal authorities and each animal tagged with a little metal plate stating that it was officially recognized by the Government as foundation stock. In order to avoid confusion and to limit the registration of pedigrees, all efforts have been concentrated on the three main breeds, Toggenburg, Saanen, Nubian, which are noted for their milk-producing qualities. The amount of milk produced by many of these goats is truly remarkable. Official records have been made of over 2,000 pounds per annum, and one animal is credited with a production of 2,941 pounds.

No laborious work is entailed by an owner in caring for a herd of goats. A snug and comfortable house, free from draughts and rain-proof, is all that is required for shelter. A good-sized yard is necessary for the animals to browse in. In feeding, leaves of all kinds, broom, wild berries, and practically all kinds of brush are relished by them, as well as grass and most weeds, they will also eat the young shoots of bracken and of coniferous trees, and in winter will eat freely of the latter, and bark the young branches as well.

Chief Sources of Income

The chief source of income from a goat is derived in the form of milk, which is the equal of

cow's milk in nutrition. Practically all of the goats now in the province are owned by householders, who keep one or two in the backyard or on a nearby vacant piece of land. They are milked twice a day at regular hours, and thrice if the goat is a heavy milker. The income from milk alone in the province last year amounted to \$45,300, representing 75,450 gallons. In addition, butter and cheese can be made from the milk, but experiments have proven that the quality of these products is not up to the standard of that made from cow's milk, and as a result there is no market.

A goat breeder's society was formed in British Columbia in 1917 with a membership of 176, which has increased annually until at the present time the number is well over 400. Another society, known as the Canadian Goat Society, has also been formed for the purpose of registering pedigrees of goats.

There is a continual demand for goats in British Columbia, where the climatic conditions and abundance of natural feed make the province an ideal one for the raising of these animals. In time it is probable that the other provinces, inspired by the success which has attended the efforts of breeders in British Columbia, will also take up this form of livestock, and in the meantime no efforts are being spared to make the Pacific province the leading goat-raising territory on the continent.

Canada's Growing Trade

By many of the uninformed the fact that the Canadian dollar in the United States has been at a discount ranging as high as eighteen per cent, combined with a superficial knowledge that the fluctuating dollar value is based on a nation's trade, is taken too readily as assumption that there is something radically wrong with Canadian trade, whilst this is in reality a purely temporary situation brought about by the general upheaval of the war, without any root in economic unsoundness and of a readily adjustable order. A review of Canadian trade for the past half century not only illustrates phenomenal growth but a healthy balance maintained throughout the period between external and internal trade figures, disturbed only by the Great War to which are directly traceable the exchange evils which have since prevailed.

In the period since Confederation in 1867, Canada's total trade has multiplied twenty times. In the same period her exports have increased nearly twenty-three fold and imports nearly twenty fold. In 1868 total trade was \$119,791,879; exports \$52,701,720; and imports \$67,090,159. The total trade of the Dominion for the last fiscal year amounted to \$2,450,587,001, of which \$1,210,428,119 was represented by exports and \$1,240,158,882 by imports. This is a sufficiently even balance of trade not to effect exchange, but the disturbing factor comes to light in analysing the distribution of trade.

The Exchange Situation

The United States and the British Isles are the countries with which Canada transacts most of her trade, their transactions accounting for seventy-eight per cent. of the nation's total trade. The aggregate trade with the United Kingdom amounts to approximately one-third of that done with the United States. In the case of the Dominion's trade relations with the United States, however, imports feature heavily over exports, whilst the reverse situation prevails to an aggravating extent in the matter of trade

with the United Kingdom. In the last year in trade with the United States, a trade balance of \$295,930,005 was created in favor of the latter country, whilst Canada had a balance in her favor of \$100,281,907 by reason of her trade with the United Kingdom. This it is which has had the effect of elevating the value of the American dollar and depreciating the value of the English pound.

The public in Canada would seem to have arrived at a realization of the necessity of getting Canadian trade back to a more normal basis, and the extensive propaganda of the "Buy in Canada" campaign is showing its effects in the surprising decrease in value of imported goods during the present year. For the first eight months of the year imports to Canada have declined by \$305,642,979 or a little more than 35 per cent. Imports from the United Kingdom have fallen off by \$116,467,276 or 57 per cent., and those from the United States by \$237,799,357 or 38 per cent. Unfortunately the decline is least where it should be greatest to effect complete readjustment.

Effect of the Fordney Tariff

Another factor has entered into the situation with the coming into effect of the United States Fordney Tariff Bill, calculated to seriously curtail the flow of Canadian produce across the border. Export figures to that country for the month of August were only about half of those for the same month in 1920. The produce formerly marketed in the United States must now find a market overseas and exports to the United Kingdom are to be expected to increase substantially. This leaves the only solution to the situation in a corresponding increase in Canadian purchases overseas, which in its turn is dependant on the settlement of the economic situation in the British Isles.

However one views the situation it is evident that Canadian trade is in a healthy state and merely distributed by the stress of world conditions in a manner that is not economically the best. The remarkable manner in which her trade has grown and continues to expand has been noted, and new markets are being continually opened up. Whilst her lack of certain lines of industrial development necessitate heavy importations of manufactures, these are balanced, as has been seen, by her tremendous agricultural and other natural productions. Her distribution of trade is at fault due to world circumstances over which Canada has little control.

Cattle Export Industry

The coming into effect of the Fordney Tariff Bill and the finding of the special British Royal Commission on the Canadian cattle embargo question were almost synonymous events, significant both in their effect upon the Canadian cattle export trade. Just as Canadian farmers were viewing with some apprehension the virtual closing of the United States market to their livestock, the years of strenuous effort on the part of Canadian politicians and livestock organizations were rewarded by the report of the Commission that in its opinion Canadian cattle are healthier than either English or Irish cattle, that their addition to British herds for breeding, dairying, and beef purposes will promote their restoration to the status the war impaired, and be of wholesale benefit to the British public in giving them lower meat and milk prices with a considerably augmented supply. At the time of writing, though still strenuously opposed by affected interests, all that is wanting to open the gates of the British Isles to unrestricted entry for Canadian cattle is the official cancelling of the em-

bargo recommended by the Commission, which would appear to be merely the matter of the necessary legislation.

The prime argument in combating the embargo has been the presence of Canadian cattle sent to England for this purpose by governments and farmers' organizations, the altogether splendid qualities of the fine specimens putting forth the strongest claim to unrestricted entry as against the necessity of slaughter within ten days of landing. And this has occurred at a time when, with little hope of the removal of the embargo, and the closing of the United States market, Canadian livestock organizations from all parts of the Dominion were thoroughly investigating conditions in England with regard to meat markets, considering the shipment of beef in a frozen or chilled state, even making experimental shipments of this nature.

The Removal of the Embargo

The removal of the embargo which permits the entry of Canadian cattle in all conditions will open a much larger market to Canadian livestock men, achieving an object for which they have striven for many years. The stimulus given to the Canadian overseas cattle export trade in the anticipation of the removal of the embargo is featured in Montreal's last shipping season, where figures have shown a considerable increase following the years of stagnation which came in the wake of the lifting of the United States embargo in 1897, leaving an unrestricted market in that country. During the four months ending September 1st, fifteen thousand head of cattle were shipped from Montreal to Liverpool and Glasgow, and a further three thousand in the first two weeks of September, with thousands yet en route to the St. Lawrence and Atlantic ports. Ten years ago the total shipment of cattle from Montreal in the same period was 32,000 head, about twice the figures of the present season, whilst the true magnitude of the possibilities of the Canadian export livestock trade may be realized from the figures of ten years farther back when 112,611 cattle were shipped in the same period in 1904 and 118,296 in 1905. The 1904 figures also show 48,000 sheep.

In the era of the giant ranches the export trade in cattle overseas was one of Canada's basic industries. The opening of the United States market diverted this trade to other channels. To-day, though the big ranches with their enormous herds have in the main disappeared and are largely parcelled out into farms, these more intensive acreages are raising more cattle than the area supported formerly. Whereas in 1901 there were five and a half million cattle in the country, and seven millions in 1907, there were in 1920 nearly nine and a half millions.

In general, the situation as it will stand with the removal of the British embargo is much the same as that which existed before the lifting of the

United States tariff on livestock in 1897, with the added advantage to Canada that she is not restricted to the export of cattle to be fit for slaughter ten days after entry. The market will now have no restrictions.

Advantages of a Canadian Branch Factory

Probably no country involved in the maelstrom of the Great War made such rapid rehabilitation and extricated herself so speedily from the entanglements of the aftermath as the Dominion of Canada. Though suffering from many disabilities traceable directly to the economic upheaval of the period of hostilities, she attacked them concertedly and with united effort. The more serious have been overcome, time alone will solve others, and meanwhile the Dominion faces a future of unparalleled promise.

Canada was not satisfied to achieve readjustment to the position she had occupied when the German menace called upon her to enlist her resources and manhood in the cause of humanity. Her world efforts gave her a new birth, occasioned wider and greater ambitions. Her new national status was recognized at the Peace Conference, and the realization of this new dignity instilled in her greater desire and endeavor and instigated her to surpass that very creditable record of progress she had made before the war. This spirit was very noticeable in the manner in which the Dominion went out in pursuit of trade, not only in an attempt to regain that which had to a great extent been lost through the war but, in a new spirit of confidence, penetrating new and hitherto untouched fields. Canada is now, in a degree previously unreachd, a serious trading nation, and this it is to the advantage of manufacturers the world over to realize at once.

A clear response to this new trade importance has come from the United States. A most pronounced and significant development of the post-war era in Canada has been the invasion of the Dominion by United States capital. This has taken many forms, but it is proposed to confine attention here to industrial capital and the interest exhibited by manufacturers across the line. A variety of reasons might be proffered as having occasioned this, and the probability is that a thorough analysis would disclose that the new industrial interest has been brought about by a combination of the several. Certain it is that United States interest in investing industrial capital has never been greater, the most noticeable feature being the large increase in the establishment of branch factories and plants of parent houses across the line.

American Capital takes place of British

Previous to the war the money which oiled the machinery of the Dominion and was in a large measure responsible for industrial development was overwhelmingly British. This, of course, practically came to a standstill with the outbreak of the war, and post-war conditions of various natures all militated against the British investor sending his money to Canada. Funds were needed at home, with a purchasing power very much diminished, and British currency was at a very high discount in Canada which was sufficient discouragement in itself against sending money overseas for investment. With only slight alleviation the situation remains very much the same to-day. Though some British capital is finding its way to the financing of Canadian industry the general trend of economic affairs is too stressful to expect for some time anything like the volume of the pre-war period.

The precise situation which has worked against British capital has favored that of the United States. American money has been, and is, at a considerable premium in Canada, which is a sufficient inducement for anyone contemplating investment in the Northern field to act quickly. As far as United States manufacturers are concerned there is a further one in the Made in Canada campaign, which is an enthusiastic economic move-

ment from coast to coast in the Dominion. Householders look askance at the idea of purchasing where their dollar is discounted at several cents, and are by every possible means curtailing their purchases across the border. This has driven United States manufacturers selling to Canada to establish plants in Canada if they are concerned about keeping their Canadian trade.

As a result of a realization of these conditions among United States manufacturers more than two hundred branch factories of their industries located in Canada in 1919. It is unfortunately not possible to give corresponding figures for 1920, but without doubt, from all the indications of the year, there were many more than in the previous year. There are 700 branch factories of United States industries operating in Canada at the present time, and not less than 200 other American factories seeking Canadian locations. That this process of establishment is continuing, as wide-awake manufacturers across the line become aroused to the advisability, indeed necessity, of establishing Canadian connections, is evident in the number of federal and provincial incorporations and the continuous stream of inquiries from across the border received by Canadian Boards of Trade and other industrial bodies concerned in assisting and placing new industries. These inquiries cover every branch of manufacturing activity, and in one Ontario town more than one hundred such inquiries were received last year from such industries as automobile welding, chemical and toilet preparations, proprietary medicines, metal and wood working tools, wire goods, etc.

Why U. S. Manufacturers come to Canada

What induces so many United States manufacturers to locate in Canada? The reasons are not far to seek. Before the war when there were about 350 branch plants of United States industries operating in Canada it was generally accepted that they had made this move to escape the Canadian tariff, and this was probably correct in the majority of cases. But now the wide-awake United States manufacturer is actuated to this end by a greater variety of reasons, all contributing to the absolute conviction that he can manufacture for the Canadian market and Empire trade more profitably and cheaply in Canada than in the parent plant.

The depreciated purchasing power of the Canadian dollar in the United States has already been noted as a special inducement for establishing a branch plant in Canada at the present time and the natural corollary of reluctance on the part of the Canadian public to buy across the border where their money is worth so much less than at home. United States firms have also found that export orders received by the parent company in the United States for shipment to the United Kingdom and other parts of the British Empire can be handled with greater facility and more expeditiously through a branch house manufacturing in Canada. In the matter of Empire trade, foreign firms are induced to the same end by the opportunity afforded them of securing the advantages of the many preferential tariffs which exist for the benefit of countries within the British Empire. Preferential treatment is accorded, for instance, certain Canadian goods by Great Britain, New Zealand, South Africa, Australia, British Guiana, the West India Islands, whilst under the terms of an agreement with France existing since 1907, Canada's products enter that country under especially favorable conditions. Again, the United States firm which has developed a market for its products in Canada, by locating in a small way in the Dominion, has its market within easy reach and is in a position to grow and expand with the domestic market as well as the export trade. The phenomenal rate at which Canada is progressing in all phases of its national life is too well known to need elaboration on the point here.

The benefits accruing from the establishment of United States industries in Canada are mutually to the advantage of the United States investors and Canada, who thus gains the advantage of the development of her industries by foreign capital. The increased population which such industries encourage is indirectly

accommodating another of Canada's aims and providing an added market for the food products of the Dominion. Canada possesses all the requirements of national order for industrial expansion of every description, lacking only the necessary capital to establish them and put them in operation. Therefore, Canada through organizations of every nature, its railways, its incorporated cities and towns, its civic bodies and boards of trade, offers every inducement to new industries to locate on its broad expanse. In no country is greater encouragement given to foreign manufacturers to locate, whilst the expanding domestic market and the rapidly growing export trade furnish a sure and steady output for products.

In some of the Canadian provinces certain towns still offer a bonus to new industries locating within their confines, though in other provinces this practice is forbidden by law. There is, however, sufficient inducement without this. A great many towns of substance and progress, anxious to expand industrially, offer free sites to new manufactures, and in a number exemption from taxation is granted for varying periods up to twenty years from the date of locating. Water is often provided at cost to industry, whilst some cities and towns make themselves responsible for the expense incurred in the installation of public improvements in the way of street extensions, sewerage, waterworks, etc., about the site and premises of the incoming industry.

A feature of Canadian industrial development to be borne in mind is the Dominion's possession of an enormous wealth of water powers, amounting in all to 19,500,000 horse power and widely distributed. The insignificant portion yet developed suffices to provide light, heat and power to industries at very low rates, special terms being generally accorded over the low cost of generation and production. Winnipeg, for instance, provides power to industrial concerns at a rate cheaper than any other point on the American continent.

Every Assistance to Projected Industries

Generally speaking new industries locating in Canada can do so at a minimum of expense, every possible inducement and assistance being held out to them. Boards of trade and industrial commissioners throughout the country are anxious to have prospective manufacturers appraise the advantages of their own particular towns and extend every co-operation and assistance in locating. The railways of Canada maintain special industrial departments for the aiding and locating of industries along their lines. Their staffs have at all times a wealth of information on hand covering locations of natural deposits, available industrial sites, suitability and advantage of locality, and experts give advice on settlement, having at their finger ends knowledge of all pertinent factors.

Canada has undergone a trade revolution since the termination of the war and has awakened to a clearer vision of her illimitable opportunities. She is reaching out on every hand, seizing new trade and expanding exports, every month reporting new developments of this nature and new countries reached in a trade way. The Canadian manufacturer has become instilled with a new ambition and vision. The inevitable outcome is the greater ability of the Canadian manufacturer to supply all the needs of the domestic market to the exclusion of the foreign, which means mainly the United States since Canada does by far the greater part of her purchasing across the line. The United States manufacturer must come to Canada if he is to maintain his Canadian market. He can no longer afford to put off establishing in Canada if he has a market here of any volume which he is anxious not to lose. All indications tend to indicate the increasing desire to curtail purchases across the line, supported by sound economical reasoning. Self-preservation suggests the only possible remedy to the United States manufacturer—the establishment of a branch factory to manufacture his goods in Canada.

Industrial Nova Scotia

Nova Scotia's claim to national and world attention arises from many sources, all of which spring from the numerous gifts a bountiful nature bestowed upon her. With one of the finest fishing fields off her coast, with a wealth of coal deposits readily accessible to mining and transportation, and possessing one of the finest stands of timber yet remaining on the American continent, she pursues her own way so steadily, supplying these world needs, that her progress is often overshadowed by that of newer areas gaining their youthful inches with much vociferation. And whilst maintaining her importance in relation to those cardinal points in production, she advances steadily in other directions. In industry, for instance, she is no laggard, but in this regard advances with other lines of development.

Of the 35,797 manufacturing industries reporting to the Dominion Bureau of Statistics at the end of the year 1918, Nova Scotia accounted for 2,125, and in its aggregate capitalization of \$133,262,649 of the total Dominion capitalization of \$3,034,301,915, ranked fourth among the provinces of Canada, following Ontario, Quebec and British Columbia. It occupied the same relative position in the 1915 census with 968 industrial establishments, the increase in the three years being strikingly indicative of the growth of industry both in the province and in the Dominion as a whole. The value of provincial industrial production in 1918 was \$160,409,890, the cost of materials used in achieving this being \$93,540,657. There were 29,036 persons employed in these industrial establishments receiving annually salaries and wages totalling \$24,814,229.

Many Manufacturing Industries

There are ten manufacturing industries in the province whose annual production value, according to the last available returns, is in excess of a million dollars. Iron and steel products lead with \$10,457,279. The value of output increased annually by five million dollars during the war years. Railway cars and car works take second place with \$6,457,279. This industry also boomed in the years of war and added a million a year to its production value. The preserved fish industry is credited with third place with a value of \$4,436,413. Logs and lumber products industry is in excess of three millions; house building exceeds a million by nearly one-third; and electric light and power is also substantially over the million mark.

The iron and steel industry of Nova Scotia centres about Cape Breton Island and the county of Pictou, where coal deposits are available and the necessary ores most easily imported. Apart from this area the principal industrial points are Halifax, Dartmouth, Truro, Amherst, Sydney and New Glasgow. These are engaged in the manufacture of chocolate, biscuits and confectionery,

office and other furniture, textiles and clothing, hats and caps, condensed milk, paint, railway cars, oil, and sugar refining.

Foreign Export Trade

There is a great future for industry and the foreign export trade in Nova Scotia, and the Maritime province, from its physical position and features, offers many and great inducements to the industrial investor. Her water powers are powerful and widely distributed, whilst her supply of coal is abundant and easily mined. A wealth of raw material of every kind awaits utilization within her confines. She is in the most advantageous position for reaching the overseas market, and her harbors and shipping facilities second to none. Halifax Harbor is undergoing developments which will make it one of the finest in the world, and Sydney harbor, which for ten months of the year has hardly a rival in the North Atlantic, with its fifteen miles can hold "all the shipping in the world."

If further inducement were needed, the ships to carry away the manufactured produce can be built, completed, and fitted out in the excellent shipyards of the province.

Industrial Outlook in Western Canada

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Business is picking up in the West, has picked up, as a matter of fact, and is looking to better times as the months roll along. Recent surveys show that actual volume of goods sold equals previous years, but naturally, with reduction in prices, the volume in dollars and cents is less. There is no doubt, so far as the West is concerned, that a marked improvement is being shown along all lines; in addition, there is the added confidence which comes with the brighter outlook—making it more easy to assume that with the turn of the year, capital is likely to branch out again and recommence development.

Many problems have had to be faced and dealt with during the past summer and fall months, but the Western people appear to have the happy faculty of meeting difficulties, and seeing that they are satisfactorily settled.

Winnipeg held a "Shoppers Exposition" under the auspices of the Board of Trade, when the retail merchants displayed their wares, marked with 1920 and 1921 values. It was successful in demonstrating to the purchaser that there really had been a steady downward tendency in retail prices and that the purchasing value of a dollar showed a decided increase. The exposition was a happy inspiration on the part of Winnipeg business men and the public showed its appreciation by visiting it in thousands. This is an example of the effort which is being made by the trade generally to overcome a number of prejudicial ideas which have been adversely affecting trading conditions; it enabled the public to appreciate present day prices and values and to realize that efforts are being made to get costs down to a reasonable basis, having regard to existing conditions.

The Pacific Coast Province

In Vancouver and on the Pacific Coast generally, there is a distinctly better tone, merchants speaking of conditions as showing an appreciable improvement with the likelihood of still better times ahead. Export lumber business is building up and heavy shipments to Great Britain, Australia, New Zealand, China and Japan have taken place, and prospects appear to be for the further opening up of South American markets. In the interior,

of British Columbia the fruit and vegetable crops brought good returns and placed a large amount of money in the hands of the producers. The season was a very successful one and demonstrated the value of fruit organizations to handle crops. Great strides have been made in the last few years and the grower now knows that the fruit is marketed to the best advantage, while the consumer gets the grade and pack that he pays for. Service in packing, handling and carrying has been good, while markets are being extended, so that it is not difficult to see a tremendous development in the apple and other fruits business and even greater efficiency and dispatch in handling to market.

In a general way the Pacific Coast Province is picking up and ready for steady expansion of its wonderful natural wealth in minerals, lumber, agricultural products, fish and manufactured articles together with an extended effort to develop its export trade, in connection with which many more lines of steamers have made Vancouver and Victoria ports of call.

In the Prairie Provinces, the cycle of prosperity appears to have begun to revolve. Never very long to suffer from depression, there is a marked bettering of conditions and a confidence in the outlook. Traders speak well of conditions as they exist, taking into consideration the lessons of the past few years, and of the prospects for good business as a natural outcome of the phase through which we are just emerging.

While with the approach of the winter months one cannot say what big developments are likely to be shown in next year's program, it is an undoubted fact there are many important projects to be dealt with, and it seems reasonable to believe that some of them, at least, will find their beginning in 1922.

Raccoon Ranching

The raising of wild animals for their pelts in Canada, which may be said to have had its inception in the cult of the silver fox in Prince Edward Island, has spread all over the Dominion and come to include within the scope of its activities practically all fur-bearers of any value. One which has been somewhat slow in finding favor in the Dominion, but which has risen to greater popularity with the increased value of its skin, is the raccoon. The initial successes achieved in Canada in the domestication of this little animal has thrown light upon the industry and the profits to be secured from its following, and has encouraged many to enter upon this interesting pursuit. Now raccoon ranches are to be found all over the eastern and occasionally in the western provinces.

Canada holds out particular advantages to those inclined to follow the farming of these profitable little fur-bearers. The climate and topography of the Canadian provinces are conducive to the production of richer and glossier furs of all kinds than other countries. This is true of both the wild and domesticated animals and the raccoon is no exception. Coons found wild or raised on ranches in Canada are stated to be in every way superior to those in existence across the border.

Easily Domesticated

Authorities are of the opinion that raccoons are the most easily domesticated of all the denizens of the wild, after a short time in confinement losing all inclination to stray from their new

homes and becoming as home-loving as kittens. If permitted to stray from their pens they will invariably return. They are less delicate in the rearing than foxes and it is almost impossible to kill them through exposure or neglect. They are both meat and vegetable feeders which simplifies the proposition of dieting. Their food in the wilds consists largely of frogs, honey and birds' eggs; domesticated they thrive exceedingly on butchers' scraps, cooked and boiled corn. Gloss is put on the fur by periodical administrations of castor oil.

Not only is this animal a fur-bearer but valuable in his products from three points of view. Besides his pelt, which of recent years has greatly increased in value, from twenty-five to forty pounds of palatable meat, as fine as lamb, is taken from his carcass as well as about a gallon of oil.

Generous Profits Obtained

The raccoon is prolific, producing at a birth from two to nine of a litter, so that a substantial ranch can be built up in a very short time and the proposition put on a profitable basis. Possessed of a home-loving instinct as these animals are, a ranch may successfully be conducted within a very limited area. A very successful one, in fact, is conducted within the confines of the city of Montreal where a breeder, after experimenting all his life with other species of furbearers, decided upon the raccoon as offering generally the greatest profits, and has run his ranch for six years. The foundation stock he obtained from animals caught by farmers and from other domesticated stock.

There is a great future for the domestic rearing of fur-bearers in Canada, and each year the industry is attaining more important proportions. Settlement is gradually curtailing the natural haunts of these animals, and on the other hand national fur markets at Montreal and Winnipeg are becoming important as world fur centres. As the richest producer of wild furs in the past, Canada is determined to maintain her prestige in the future, against the inevitable diminution of the catch, by extensive establishment of domestic ranches, providing profitable openings for many followers.

The Trapping Season Opens

Indications are that the coming season will be one of the most prosperous trappers have experienced for many years, with the possible exception of the extraordinary season of 1919-20. In consequence many trappers who last year deserted the chase, not foreseeing sufficient profit in it, are once more looking to their traps and snowshoes and completing preparations to be in a position to hit the trail with the first snow.

There are several reasons for this optimism. Fur houses are in need of pelts, and prices are good. Whilst furs have dropped from the phenomenal prices which prevailed two seasons ago, raw pelts are selling in most instances at several times the amounts they brought before the war, and at the fall fur auctions in Canada, as well as elsewhere, a striking rise in the amounts realized for most species of fur was noted. There is a brisk demand for

muskrat, mink, skunk, raccoon and other pelts, and the indications are that the demand will grow during the coming months. It is also expected that this season's catch will be of better quality than last season's, the weather of which was extraordinarily mild. This winter, according to the prognostications of experts, will be colder, more akin to the bracing atmosphere which imparts the rich, luxuriant coat to the fur-bearing animals which has placed the Dominion in the premier place among producers.

A Purely Winter Pursuit

Canada, in general, has more summer occupations than winter ones, but in trapping she possesses a purely winter pursuit which can only be followed when the snow has fallen and the denizens of the wild have arrived at the full growth and luxuriance of the clothing which Nature gives them for protection against the inclemency of the winter months. On the American continent trapping has come to be almost exclusively a Canadian line of activity, followed each year by a host of men with a satisfying profit.

Each fall, as the days decline and signs of the inevitable approach of winter are imminent, in the north of the Canadian provinces, there is an Out 'o Door army of men, who have lounged and lazed through the summer months on their winter's profits, who begin to look once more to their traps, repair their snowshoes, prepare their bait, lay in provisions and ammunition, and investigate the territories for their winter's trapping operations. The antithesis of the farm laborers and harvest helpers, they are winter workers whose activities begin with the first snow and cease when it begins to disappear in the spring, and whose calling is profitable and remunerative enough to keep them handsomely without work for the remainder of the year.

The ranks of these professionals are supplemented materially at the approach of winter by homesteaders and others whose activities on the land, ceasing to a great extent with the advent of frost, are anxious to make that period profitable to themselves and through the securing of greater financial resources make greater headway in their first years upon the land. Workers on farms, harvest helpers and laborers, often follow this winter pursuit, returning south in the spring to the areas where farming settlement has driven the wild fur-bearers northward.

\$20,000,000 of Raw Pelts

Though continuous and extensive agricultural settlement is fast curtailing the wildernesses which are the haunts of the valuable fur-bearing animals, trapping is still a very profitable pursuit and will be for many years to come. More than twenty million dollars worth of raw pelts were taken by trappers in Canada last year. Saskatchewan trappers received more than two million dollars for the furs they secured during the winter; the annual pack of the Hudson's Bay Company and Northern Trading Companies shipped to London from Northern Alberta were worth about a million dollars, and about one and a half million dollars worth went from the same province to the United States; the value of the catch in Northern Manitoba was worth approximately two million dollars; and that of Northern Ontario, the richest trapping ground of Canada, is worth each year much more than any of these.

Trapping is an engrossing and romantic pursuit which any one can enter upon with a minimum of outlay, and experience which can be speedily acquired. A line of traps, a winter's provisions, bait and ammunition, and the trapper is set up for the season. The wildernesses belong to nobody or anybody; the trapper is free to profit through whatever he may secure through his efforts or ingenuity. He is his own master, monarch in a peculiar respect of the breadth of his trapping domain, to pursue his calling in the free open all winter, and with a profitable bag follow his own inclinations for the summer.

Across Canada—Victoria.

If the city of Victoria, the capital of British Columbia, were ever seeking a descriptive slogan, the natural one to suggest itself would be "The city where roses bloom at Christmas time," for

no account of the beautiful island port would appear to be complete without this very pithy and comprehensive phrase. Victoria's peculiarly mild and even climate sets it apart from other Canadian cities and towns. The temperature is rarely over 75 degrees or below freezing. Bathed in almost continual sunshine, the soft warm breezes of the Pacific wafted over it, with every variety of flower and shrub blooming about it regardless of season, Victoria is indeed a charming city, a comfortable place of residence, and fit site for the first city of a province so fair and wealthy.

Victoria is situated on Vancouver Island, which with its adjacent smaller islands contains an area of about 15,000 square miles. It is reached from the mainland from Vancouver, a delightful ocean voyage of about seven hours on comfortable steamers, in the course of which the traveller passes innumerable little islands on either side, verdant and tree-clad. From the city three railway lines radiate into the interior of the island which contains a wealth of natural resource to a large extent as yet undeveloped. Steamer services give it contact and communication with the Orient, Seattle, Prince Rupert, Puget Sound and Alaska.

The Capital of British Columbia

Victoria's prime importance in Canadian national life naturally arises from its being the capital city of British Columbia, the centre of the affairs of what is generally conceded to be potentially Canada's wealthiest province. It has become a favorite residential locality particularly with people from the British Isles, whilst the exquisite beauty of its surroundings attracts yearly to it thousands of tourists from all parts. It has many splendid hotels, excellent schools and churches and a university.

Industrially the city is not insignificant, featuring largely as the commercial centre of Vancouver Island which has been favored with much natural wealth. It is the headquarters of the Pacific whaling fleet, whose activities have greatly increased since entering upon the utilization of waste fish products. Its industries number nearly two hundred, comprising biscuits, boats, brass, carriages, furniture, machinery, cement, tile works, soaps, dry dock, rubber roofing, jams and preserves. The value of its imports last year was \$10,538,841 and of its exports \$22,286,473.

Victoria is prominent in national life and widely attractive as a centre of unparalleled cultivated and wild beauty. Separated from the mainland it has not received its full share of the province's commerce and industry, and before arriving at its due importance in this regard, awaits the more adequate development of the wealth of Vancouver Island to which it acts as outlet. For beauty of location and environs, for equableness and tranquility of climate, for

the most desirable of living conditions, it can hardly be excelled. That the city is also developing rapidly is revealed in its population figures. Founded in 1846 its population in 1901 was 20,000; in 1919, 60,000; and by 1920, 65,000.

The McGill Centennial

A notable event, not only creating educational history but having a marked national significance, occurred in October when McGill University at Montreal celebrated the completion of its first hundred years' work and its entrance upon the second century of its glorious history. To fittingly celebrate the centennial a week was given over to a reunion of students, a week replete with event and resplendent with ceremony, at which nearly three thousand graduates, drawn back to their Alma Mater from all parts of the world, in which many of them are filling the highest of public offices, took active part. To further signalize the occasion many notables of Canadian, American, and European public and educational life were especially honored by the University.

McGill University was founded in 1821 by John McGill, a prominent merchant of Montreal, and received its charter in the same year. Its history since that date has been an honored and illustrious one. More than eight thousand students have been sent out from its different faculties and departments to be scattered throughout the length and breadth of Canada and into every corner of the globe. There are graduates of McGill in practically every country of the universe, and they have attained fame in every field of human endeavor. They are to be found in the high places of the public and national life of many nations; they have occupied university chairs in the Motherland; they have grappled with the administrative and engineering problems of the outposts of Empire; the while they are permeating the life of the Dominion. It is the finest tribute to the old university that in many parts of the world McGill and Canada are synonymous terms, the one suggesting the other.

Representatives from Foreign Universities

Representatives of many foreign universities and centres of learning attended the McGill centennial to do the institution honor on behalf of their own colleges, and the high regard in which McGill University is held the world over was attested by the shower of messages of congratulation which poured in from many countries. These included Leeds, Nancy, Louvain, Brussels, Ohio, Trinity, Dublin, Syracuse, Brynmawr, Wales, Johns Hopkins, St. Andrews, California, New Brunswick, Harvard, Yale, Pennsylvania, Toronto, Cornell, Wisconsin, Chicago, New York, Ohio and Sorbonne universities.

The functions of the centennial were presided over by General Sir Arthur Currie, the new principal of the University, and former command-

der of the Canadian corps in France, Belgium and Germany. Lord Byng of Vimy, Governor-General, another former Canadian Corps commander, was present. E. W. Beatty, president of the Canadian Pacific Railway, newly elected to the chancellorship of the University, was ushered into his office, whilst Sir Auckland Geddes, ex-Principal of McGill, now British Ambassador at Washington, who left a professorship at McGill in 1914 to go to England and eventually enter the British cabinet, was one of the notables to be honored by the University with degrees.

Not the least touching or inspiring of the ceremonies of the centennial celebration was the unveiling by the Governor-General of a war memorial to the sons of McGill who fell in the Great War. McGill's war record was a praiseworthy one and constitutes one of the finest chapters of the University history. Before 1914 it maintained an officers' training corps which at the outbreak of hostilities was joined by practically every student in attendance and many graduates. It enlisted and reinforced university battalions and supported a complete hospital unit overseas. A total of 2,500 students and graduates enlisted, of whom 341 found graves in Flanders. Three hundred and eighty-two McGill men received war decorations.

Degrees Conferred on Prominent Men

The day of the centennial was marked by the conferring of degrees on fifty-four men and women prominent in the literary, educational, political, engineering and commercial life of Canada and the United States. Among those to be so honored were Sir Auckland Geddes, the Chief Justice of Canada, the Premier of Quebec, the president of the universities of Yale, Harvard and Princeton and Montreal, Bliss Carman, Canadian poet; W.D. Lighthall, Canadian author; Sir Andrew McPhail, McGill professor and Canadian author; Lady Drummond, superintendent of the Canadian Red Cross in England, and Helen Reid, Convener of the Canadian Patriotic Fund.

The tone, no less than the form, of the speeches delivered at the convocation by representatives of foreign seats of learning, testified to the high esteem in which the Canadian university is held all over the world, and the honored place it holds by reason of its scholarship and attainments. The sons of McGill permeating the length and breadth of the Canadian Dominion, and disseminated over the globe, have carried the fame of Canada broadcast through the best traditions of the University. Canada will not lose in renown that she is known in the corners of the world through her first university rather than in her wealth of natural possessions.

Income Tax Revelations

Estimating Canada's population liberally at nine millions, on the basis of the latest returns,

roughly one person in forty in the Dominion pays income tax. Taking into account the greater number of children and dependant women in this estimation, the disclosure is not altogether disappointing. Income tax in Canada is paid on excess of \$1,000 if unmarried, or a widow or widower without dependants, and on excess of \$2,000 if married, or unmarried with dependants, with an extra \$200 exemption for each dependant child under the age of eighteen.

In the year 1920-21 a total of \$46,381,806 was collected in income tax by the Federal authorities from 194,257 persons. Farmers numbering 16,652 paid \$611,735; professionals numbering 19,366 paid \$2,642,385; 111,621 employees working for salaries and wages paid \$11,301,805; 24,483 merchants were assessed and paid among them \$7,689,521; manufacturers numbered 3,277 with a contribution of \$8,217,730; and the rest of the taxpayers throughout the Dominion numbering 18,858 paid \$11,823,563.

Farmers Paid Least

On the face of these returns the amount of tax paid by farmers is disappointing in view of the importance of agriculture as the Dominion's first industry and gives an altogether false view of the situation of the agrarians of Canada. All authorities are agreed that the tax is practically inoperative as far as the farmers are concerned, due to the difficulties of collection, difficulties which arise from lack of accounting in agricultural operations, a lack of system which enables the agrarian to avoid the tax and thus render the balance between the rural and urban returns inequitable. Should the farmers' returns be based on the same accurate system of accounting as those of the professional and business man, there is no doubt but that this class would pay overwhelmingly the greater portion of the Dominion's income tax.

Divided by provinces 72,560 persons in Ontario paid \$18,434,252 in income tax; 31,091 in Quebec paid \$14,115,644; 28,106 in Manitoba paid \$3,474,584; 18,322 in British Columbia paid \$2,094,198; 15,555 in Alberta paid \$1,359,643; 16,913 in Saskatchewan paid \$1,098,240; 7,583 in Nova Scotia paid \$1,060,591; 3,321 in New Brunswick paid \$602,935; and 339 in Prince Edward Island paid \$25,611. It is significant of the high value of farming in the rich territory of Western Canada that even in the unsatisfactory state of income tax returns from the agricultural sections that of those farmers paying income tax the overwhelming majority were located in the four Western provinces.

Giving Farm Children City Education

By F. J. Cowdery, Calgary, Alberta

To give every child on every farm in the province a practical education equal to that of the city boy or girl, is the ambitious program of the Alberta Department of Education. Especially in a country so vast where settlement

in the outlying parts is still very scattered, this is a real man-sized ambition. But Western Canada is a man-sized country, and every problem that has to be faced would appear overwhelming to one not acquainted with the wonderful development of the Canadian West. This particular problem, however, is already well on its way towards solution, and there are very few districts where the young Canadian is more than three miles from a school-house.

When the prairie country was first surveyed and formed into provinces, some far-seeing statesman laid the foundation stone of rural educational development by setting aside two sections in every township—or one-eighteenth of the whole country—as school lands. As required, these lands are sold at auction and the interest on the money thus secured is used in building and maintaining country schools. Wherever there is a settlement with four resident ratepayers within a $2\frac{1}{2}$ mile radius, and eight children between the ages of five and sixteen, a school may be established and a school district formed. Every land owner in the school district then has to help to maintain the school, but he himself, in the greater number of cases, decides what levy shall be made, through his local municipal government. This year, upwards of \$15,000,000 is being spent by the Alberta government on education alone.

A Tremendous Increase

Fifteen years ago there were just over six hundred schools to be found; today, Alberta boasts of three thousand one hundred and fifty-four, containing four thousand, three hundred and twenty-seven class rooms. The number of pupils has kept pace with the schools until last year there were 135,000 on the rolls as against a total enrolment of twenty-four thousand in 1905. This means that one in every 4.63 of the population of the province was attending school.

Although much of the territory covered by the educational system has only recently been thrown open for settlement, schools have already penetrated to the most remote corners of the province. The most southerly school is at Coutts, on the International boundary, some four hundred miles south of Edmonton, the provincial capital, while a school house is to be found five hundred miles north of the same city at Lawrence Point on the Peace River.

The greater number of these schools are of one or two rooms, but are ample for the needs of the district they serve, in so far as an elementary education is concerned. Whenever the attendance warrants it, however, the school house is enlarged, more class rooms added and a higher education given to the more advanced pupils. The consolidation of a number of small rural schools into a large central school is now under way in the more closely settled districts. The consequent greater attendance allows the formation of more grades, and in these consolidated schools a standard of education is possible very little different from the city public school. Vans and motors taking the pupils to and from school offset the longer journey for the children. There are now more than fifty consolidated schools in the province.

Free Education

Apart from such elementary education, it was felt that some effort should be made to remove the handicap under which rural districts were suffering with regard to high school, or secondary education. The result has been that non-resident children are accepted in any High school in the province without fees, and a special grant is made to High schools for this purpose. Rural schools are also being encouraged to offer high school work, and an extra grant of from \$100 to \$700 is made by the Government where this is carried out. Similar encouragement is being given to secondary work in consolidated schools, while a new policy has just been laid down to make possible a consolidation of several districts for high school purposes only.

All these policies will, in time, bring an elementary and high school education within the reach of every child wishing to take advantage of the opportunity.

For those desiring a still higher and more specialized education, there are ample facilities. A University is situated at Edmonton, where courses are offered in Arts, Law, Medicine, Applied Science, Pharmacy, Agriculture, Household Economics and Engineering. Last year the Provincial Institute of Technology and Art was opened at Calgary, meeting with such an encouraging reception, that a permanent building, costing a million dollars, is now under way. During the first year of this institute, 628 students were enrolled. Courses given here include railway, architectural and mechanical drafting, armature winding and electrical engineering, telegraphy, motor and tractor engineering, mining engineering, applied mathematics, machine shop practice and steam engineering. Preliminary classes in steam engineering and mining are also held in different parts of the province, more or less as a preparatory course to the similar faculties at the Institute of Technology.

Schools of Agriculture

Agricultural instruction is also carried on under the provincial government, which has established schools of Agriculture at Claresholm, Olds, Vermilion, Youngstown, Gleichen and Raymond. Here young farmers and farmers' children are taught scientific farming and the methods of cultivation and stock raising found to be best suited to their particular locality. For those wishing to continue this study a faculty of Agriculture has been added to the curriculum of the University.

Five thousand teachers are required to provide instructional staff for these schools, and three institutions for the training of teachers—Normal Schools—are maintained in the province, each one accommodating from 150 to 200 students. These schools are located at Calgary, Camrose and Edmonton. Although more than four hundred teachers graduate from these normal schools each year, they are not sufficient to supply the demand and teachers are recruited from the other Canadian provinces, from Great Britain and from the United States. Before these latter, however, can practise their profession they must pass a qualifying test at one of the Alberta normal schools.

In its policy of educational assistance, the Alberta government helps students to complete their training as teachers by granting them loans, wherever necessary, to carry them through the course. To date, one hundred and ninety teachers have been assisted in this manner. It is recognized that in the rural districts, teachers need first class homes if the schools are to operate from year to year all the year around. Accordingly the government provides one-third of the cost of a good home, a site of not less than five acres, and the complete furnishings of the home, where such are necessary. In this important matter, Alberta leads all provinces and states on the continent.

A Teachers' Bureau

The services of the Department of Education are always available to both teachers and school boards, to enable them to readily get in touch with each other, and for this purpose the department is maintaining a free teachers' bureau. Last year this bureau was directly responsible in placing 1,100 teachers and indirectly assisted the Normal schools in placing half as many more.

Reviewing the changes that have taken place in every phase of life on these Canadian prairies, it is hard to realize that they have all happened within the last decade or two. How typical of the whole country is the progress shown in the educational facilities afforded by the city of Calgary during the last twenty-five years, during which time the city itself has witnessed such a phenomenal growth.

In 1884 the first school was opened—a one-roomed log shack—but sufficient for the needs of the settlement's nine pupils. To day, within the city limits, there are some sixty-four schools employing more than three hundred teachers and costing upwards of five million dollars. Last year 14,239 students were in attendance. In the rural districts the growth has been just as steady and as rapid, and there seems no doubt but that the province of Alberta will solve the problem it has set itself—to give the farm child a city education.

Canadian Book Week

By B. K. Sandwell, Secy., Canadian Authors Association, Montreal

At a conference held on Friday and Saturday, September 9 and 10, between the Publishers' Section of the Toronto Board of Trade, including practically all the more important English language publishing houses of Canada, and a special committee of the Canadian Authors Association, an agreement was reached for close co-operation between these two bodies in the organization and carrying out of a Canadian Book Week, to be observed in every part of Canada, during the week commencing November 21.

The term, Canadian Book Week, means a week devoted to propaganda in the interests of books written by Canadian authors, and more particularly to propaganda for the increased sale of any such books by Canadian authors as may be obtainable this autumn from the Canadian Book Trade.

The publishers are preparing to expend a large amount of money and of energy to insure the success of this campaign, which obviously means so much to Canadian authors not merely for the present season but for the future. But that success cannot be wholly assured by money expenditure or commercial effort alone. The Canadian Authors Association, through its special Book Week committee, has undertaken to supplement the work of the publishers, by various forms of effort which can only be carried on by such an association. These efforts will be mainly carried on through the following six channels:—

(1) **The Press.** The Association will provide, and endeavor to secure the publication of, the largest possible amount of reading matter drawing attention to the large number and high quality of works by Canadian writers now being offered to the public through the book trade.

(2) **The Schools.** The Association will endeavor to arrange through the proper authorities, the holding of special classes or the delivery of special addresses on Canadian literature in every educational establishment, and will undertake where required to provide volunteer speakers or instructors for this purpose. It will also offer prizes of books to be competed for by scholars.

(3) **The Libraries.** The Association will endeavor to enlist the interest of all librarians in the Canadian Book Week and to assist in the arrangement of special exhibits, displays, lectures, posters, or any other means of propaganda which can be employed in libraries.

(4) **The Churches.** The Association will endeavor to secure the aid of the churches, both through their ministers and through the various lay societies in connection with them, with a view to drawing attention to the Canadian Book Week by means of sermons, addresses, prize competitions and any other suitable means.

(5) **The Booksellers.** The Association will endeavor to assist the booksellers in their effort to feature Canadian books during the Canadian Book Week. There are many ways in which this can be done, but all of them involve the maintaining of a sympathetic and friendly relation between the booksellers and the authors who happen to live in the same community.

(6) **Clubs and Societies.** The Association is approaching a large number of clubs and societies which are open to listen to addresses on literary subjects, with a view to arranging that before or during the Canadian Book

Week such clubs or societies shall be provided with an address on the objects of the Week and the claims of Canadian writers for the support of their fellow citizens. The Association will endeavor to provide speakers wherever called upon to do so.

The associated publishers have undertaken to place at the disposal of the Canadian Authors Association a large number of books of good quality and appearance, written by Canadian authors, which may be used as prizes in any schools, literary or debating societies, etc., where competitions can be arranged which will have some bearing on the Canadian Book Week.

More Readers for Canadian Writers

Some of the methods which will be employed in endeavor to get the widest possible publicity for Canadian books during this week are:

Ministers are being invited to preach sermons on the spiritual values of a national literature.

School teachers of English literature are asked to hold competitions on subjects related to English literature for prizes which will be donated by Canadian publishers.

Literary, Debating and Young Peoples' Societies are invited to hear talks on Canadian Book Week, speakers to be provided by the Association.

Booksellers will make a special display of Canadian books and libraries endeavor to induce takers of books to read Canadian books during Book Week.

The Labor Situation

A review of labor conditions in the month of September discloses a continuance of the improvement noted in the two previous months in the unemployment situation. There is a small seasonal rise in the cost of living as illustrated in the cost of a family weekly budget of staple goods. The time lost due to industrial disputes during the month was less than in the previous month.

At the beginning of September unemployment amongst trade union members was 8.71 as compared with 9.10 in August and 2.37 in September, 1920. According to returns received from some 5,000 firms, the employment situation in the month continued to show some improvement but conditions were considerably less favorable than in the same month in 1920.

The cost of the weekly family budget of staple foods rose to \$11.82 during the month as compared with \$11.44 in August, \$15.95 in September 1920 and \$7.83 in September, 1914.

The time lost due to industrial disputes during September resulted in a time loss of 69,100 working days, there being some 22 strikes involving 3,535 workpeople. At the end of the month there were on record 15 strikes involving about 2,429 workpeople.

Industries Showing Net Increases

The industries which showed the most pronounced net increases over the previous term in employment were logging, edible plant products (particularly canneries), textiles, coal mining,

railway and water transportation and retail trade. In many cases, these gains represent a continuation of the activity already noted in the July-August period. Additions to staffs were recorded in the rubber trade, and in the textile divisions, net additions to staffs exceeded 3,800 persons.

An increase in coal mining is noted from Alberta but Nova Scotia employment was practically stationary. Sawmills continued to register declines in activity, this being largely seasonal, which was also exhibited in pulp and paper products. Decreases on a much smaller scale were recorded in building and railway construction, tobacco factories, telephone operation, non-metallic minerals other than coal, and hotels and restaurants. The last losses reflect the closing of summer hotels, particularly in Alberta.

In iron and steel products the registered decline was very slight. Decreases were recorded in railway car and other vehicle manufacture, in crude rolled and forged products and agricultural implement divisions. Compensating gains were registered in land vehicles, shipbuilding and repairing, and wire products manufacturing.

Clay and Clay Products

A young Canadian industry which is making successful headway and promises to fill an important place among Canadian manufactures is that of clay and clay products which at the same time, from Canada's wide and valuable deposits of the necessary raw material, offers the opportunity for expansive development and the investment of capital. Not only is the home industry beginning to meet domestic requirements more adequately, but from the excellent standard set by her products is penetrating with much success into the foreign export field.

The total value of the clay and clay products industry in Canada for the year 1920 was \$10,523,271, as compared with \$7,906,366 in 1919, or an increase of roughly 33 per cent. The 1919 production in turn showed an increase of 67 per cent. over the 1918 figures, which is illustrative of how this young industry is growing. In the production of last year, common brick accounts for \$4,868,958 of the total revenue; pressed brick \$1,756,760; fire proofing \$591,216; hollow building blocks \$284,163; kaolin \$15,022; terra-cotta \$120,875; pottery \$207,410; sewerpipe \$1,549,090; drain tile \$619,442; and other products \$517,335.

Valuable Commercial Deposits

Canada is fortunate in the possession of valuable commercial clays, deposits being found all over her wide area. These consist of fire clay, brick and tile clays, and earthenware clays. Fire clay occurs at Shubenacadie and Middle Musquodoboit in Nova Scotia and several localities in Southern Saskatchewan as well as at Clayburn, B.C. It is also known to occur on the

Mattagami and Missanabie rivers in Northern Ontario and on the Athabasca river below Fort McMurray. Semi-refractory clays occur in the coal measures at Westville, Nova Scotia, at Flower Cove and Minto, New Brunswick, and at several points in Southern Saskatchewan. Brick and tile clays occur throughout Canada, Ontario being the largest producer with over fifty per cent. of the total Canadian output. Earthenware clays occur in Southern Saskatchewan and Nova Scotia.

Fire clays are used most generally and extensively in industrial furnaces, blast furnaces, crucible melting furnaces, the layers and bottoms of Bessemer Converters, the furnace used in the lime, glass, clay and cement industries, lead refinery furnaces, for flues, boiler settings, linings of stacks, household grates, etc. Brick and tile clays are used in the manufacture of building brick, paving brick, sewer pipe, drain tile, chimney linings, chimney tops, etc. Earthenware clays are used in the manufacture of pottery such as crocks, jars, churns, etc., tiles or blocks of flooring, architectural terra-cotta, etc.

Import and Export

Canada's imports of clay in 1920 totalled \$672,782 in value, china clay accounting for \$242,441; fire clay \$276,139; pipe clay \$2,442; and other clays \$151,760. Her total imports of clay products amounted in value to \$10,781,592, of this amount \$5,067,492 being purchased from the United Kingdom; \$4,805,451 from the United States; and from all other countries \$908,649.

In her export trade Canada sent away to other countries clay and clay products to the extent of \$323,989, of which total \$4,678 went to the United Kingdom; \$240,128 to the United States; and \$79,183 to other countries. Comprised in this export trade were \$99,134 worth of building brick; \$2,516 worth of clays unmanufactured; manufactured clays to the extent of \$157,089; and earthenware and all manufactures of amounting to \$65,250. Exports of foreign produce in clay and clay products amounted to \$32,707.

The Manufacturing Centres

The centres about which the clay manufacturing industry revolves in Canada are St. John, New Brunswick, St. Johns, Quebec, and Medicine Hat, Alberta. These three points are responsible for practically the entire Canadian output of clay products. The prairie province industry, which draws its raw material from deposits just over the border in Saskatchewan, is an aggressive concern which has forged ahead until, according to the claims of its management, it accounts for seventy-five per cent. of the Dominion output. Supplying the western provinces it has also successfully penetrated the east and finds a market in Ontario points, giving a good account of

itself in competition with the imported article. Its products have also found a market in the United States.

The increase in Canadian clay products production exhibits the movement to meet domestic needs in this regard, but the still enormous importations of these same products point out clearly the wide field still left for expansion in this industry, which has all the aid required in the Dominion's wealth of various clays.

Copper in Canada

Canada has many and valuable known copper deposits which in their present purely partial state of development are already accounting for four per cent. of the world's copper production. Native copper occurs in Canada in a number of different localities, widely spread over the Dominion. It has been found to occur in the Maritime Provinces on both sides of the Bay of Fundy; it is known to occur in Ontario along the east coast of Lake Superior; it has been found in Central British Columbia; and in Quebec, especially in the Eastern Townships, numerous occurrences of copper sulphide minerals have been discovered. More recent explorations have confirmed old information of important deposits along the Arctic coasts of Canada near Coronation Gulf and Victoria Land. None of these deposits are being exploited commercially.

Copper at the present time is derived in Canada from the Eastern Townships of Quebec, from Sudbury and Cobalt districts of Ontario, from the Mandy Mine of Northern Manitoba, from the Whitehorse district of the Yukon and from many mines in British Columbia. Smelting is engaged in by the Consolidated Mining and Smelting Company of Trail, B. C., the Canada Copper Corporation of Copper Cliff, Ont., and the Granby Consolidated Mining, Smelting and Power Company of Vancouver, B.C. The smelter at Trail produces refined copper also and also treats in its refinery blister copper from the other smelters.

Total Production for 1920

The total production of copper in Canada in 1920 amounted to 81,155,360 pounds valued at \$14,166,479, as against 75,053,581 pounds valued at \$14,028,265, in 1919. The 1918 production of 118,769,434 pounds, obtained under war demand and stimulus, was the highest on record. Of the total 1920 production 63,395,830 pounds were contained in blister copper and in matte produced in Canada, part of which was refined at Trail, B.C., and Port Colborne, Ont., the balance being exported for refining, and 17,714,764 pounds estimated as recovered from ores exported to United States smelters.

The total production of refined copper in 1920 was 2,620 tons, practically all produced at the electrolytic refinery of the Consolidated

Mining and Smelting Company at Trail, B.C., and the refinery of the British America Nickel Company's plant at Deschenes, Quebec. The production of refined copper in 1919 was 3,467 tons, and in 1918, 3,809 tons.

By provinces, British Columbia led in the matter of copper production, accounting for 45,344,434 pounds. Ontario was next in order with 31,980,067 pounds, followed by Manitoba with more than three million pounds. Quebec and the Yukon territory produced 768,282 pounds and 334,090 pounds, respectively.

Copper exports from Canada in 1920 included: copper fine, in ore, matte, regulus, etc., 420,033 cwt., valued at \$5,253,218; blister copper 333,348 cwt., valued at \$6,617,821; and copper "old and scrap" 10,310 cwt., valued at \$147,564. Imports of copper and its products amounted to \$8,568,-035 in the same year.

The Swordfish in Canada

In the fishing grounds of the Grand Banks and off the coast of Cape Breton, Canada possesses the most prolific haunts of the swordfish, whose delectable cutlets find such favor in the dining tables of Eastern Canada and the United States. Each year the catch of this fish off the Nova Scotia and Newfoundland coasts accounts for a substantial amount in the revenue from Canada's fisheries. During the month of August this year there were 29,800 pounds of swordfish caught in the George's Banks, and in September 38,200 pounds caught off Cape Breton. Much of the Canadian catch of other years was landed at United States ports, and the closing of these outlets this year through the Fordney Tariff led to the cancelling of the second trip to the banks, so that the present total catch will probably show a decrease after having increased for some years. The catch in 1918 amounted to 4,320 cwt., valued at \$26,952; in 1919 it rose in value to \$49,364, though production was less, being 3,645 cwt., and last year it amounted to 7,411 cwt., valued at \$96,017.

The swordfish, which is so called from its prolongation of the upper jaw into a long, pointed, sword-like weapon which it uses for defence and aggression, is a sea dainty of universal popularity. In Canadian waters it ranges in size from seven to twelve feet and in weight from three hundred to six hundred pounds, though specimens are occasionally caught which run to six and eight hundred pounds. Its food consists of the smaller species of fish, which it secures by dashing into schools, spearing as many of its number as possible, and devouring them at leisure.

Schooners Specially Fitted

The capture of the swordfish forms a regular branch of the Canadian Atlantic fishing industry, the season being in the late summer months, and numbers of fishermen engage in the pursuit.

Schooners at this time are especially fitted out for the chase, a platform being raised on the bowsprit where a constant look-out is kept and from which the harpooning is done. At this time of year the swordfish, which usually follows schools of other fish, which form its prey, are to be found as a rule basking in the sun on the top of the water. The schooner approaches them and from the raised platform the fish is speared with a harpoon. The tether of the weapon is attached to one or two casks which, thrown overboard, act as a drag to the impaled fish in its endeavor to get away. A dory is then lowered from the schooner and the exhausted fish pursued, overtaken and despatched with a bayonet.

The chase is not altogether bereft of excitement and hazard, the fish often turning on the dory, with what danger to its occupants may be realized when it is considered that the sword-like proboscis is capable of penetrating a six-inch oak plank. Thus the schooner pursues its way, harpooning and bringing on board such swordfish as it encounters until a substantial catch has been made, when a return is made to shore and the fish marketed.

Canada's Pulpwood Resources

Though Canada is drawing on her timber wealth to satisfy a wide variety of needs, the principal phase of interest at the present time, both from an internal and external point of view, is in her pulpwood possessions. The United States and other countries by reason of the depletion of their own once valuable resources are constantly drawing more heavily on the Dominion's stores, whilst Canada, with the lamentable examples of timber-depleted lands to profit by, is moved by anxiety to intelligently conserve her possessions in a manner consistent with the necessary exploitation to supply world needs. The heavy drains put upon the timber supplies of the Eastern Provinces have led to a commencement upon those of British Columbia, after which nothing remains but the limited resources of the Prairie Provinces.

It has been estimated that there are 500,000,-000 acres of forest land in Canada, about half of which is covered with merchantable timber. On this there should remain, deducting the amount cleared and cut by lumbermen, according to estimate at 3,000 board feet per acre, a total of 3,279 billion feet. Owing to destructive fires this has been lessened considerably. Just exactly how much pulpwood is available it is impossible to state. A statement put out under governmental authority in 1915, estimated Canada's supply of pulpwood at 1,033,370,000 cords. A more recent estimate made by the Canadian Commission of Conservation gives the total pulpwood resources of Canada at the present time as 901,000,000 cords of coniferous pulpwood species, and adds that there are also large amounts

of poplar and jackpine in all the provinces which are, to an extent, used in the manufacture of some papers.

The Situation in Eastern Canada

A study of the pulpwood situation in Eastern Canada by the Commission of Conservation gives a total estimate of actually available spruce and balsam in Quebec, Ontario, New Brunswick and Nova Scotia as, roughly speaking, 306,000,000 cords, with a possible addition of 38,000,000 cords in Ontario with the extension of the Temiskaming and Northern Ontario Railway. Accessible and inaccessible the Commission places the supply of spruce and balsam in the Eastern Provinces at 501,000,000 cords.

The Commission's estimate includes roughly 100,000,000 cords in Ontario, 18 per cent. of which are privately held; 155,000,000 cords in Quebec, 14 per cent. private; 26,000,000 cords in New Brunswick, 46 per cent. private; and 25,000,000 cords in Nova Scotia, practically all private. The annual consumption and pulpwood exports of spruce and balsam from these four provinces is between five and six million cords.

British Columbia is estimated to contain 92,000,000 acres of absolute forest land of which 33,000,000 acres contain merchantable timber, about half of which has been damaged by fire. There are estimated to be 225,000,000 cords of pulpwood in the Pacific Coast province. Exploitation in this province has only begun, but already British Columbia ranks as third producer in the nation's pulp and paper industry, and very extensive developments in the near future are quite assured.

The totally unexploited pulpwood resources of the Prairie Provinces are estimated to account for 85,000,000 cords. Great areas of young forest growth exists on lands previously burned, and these should in time considerably supplement the present pulpwood supplies.

A Land of Automobiles

On the American continent the ubiquitous automobile has come in a way to be regarded as the standard of wealth, of worldly position and material prosperity. Though often no doubt little justified by actual circumstances, car owners are placed in a category by themselves as a trifle more prosperous than the man who walks. States and provinces illustrate their progress by their growing totals of automobile licenses, and measure their development in per capita ownership. However justifiably, the car has come to be a factor in establishing national wealth.

Pre-eminently the United States is a country of automobiles, featuring prominently both in manufacture and ownership. Huge manufacturing plants are to be found right across the continent turning out a variety of machines whose names have become familiar the world

over. Ownership is extensive, and with one car to every fourteen persons the United States leads the world in this respect.

One Car to Eighteen Persons

In the general misconception which exists outside the Dominion of Canada and Canadian conditions, relegating her to a place century-old, it is no doubt imagined by many that means of transportation are yet limited to the prairie schooner, the half tamed broncho, and the dog team. It will undoubtedly come in the nature of a surprise, therefore, to a great many people, that the Dominion has approximately one automobile to every eighteen persons, falling not so very far behind the first country of the world in this regard.

There are in Quebec 40,450 automobiles; in Ontario, 155,861; in Nova Scotia, 11,150; in New Brunswick, 10,442; in Prince Edward Island, 1,358; in Manitoba, 34,814; in Saskatchewan, 58,825; in Alberta, 36,515; and in British Columbia, 26,500. There is approximately one car to every 37 persons in British Columbia; to every 17 in Alberta; to every 13½ in Saskatchewan; to every 18 in Manitoba; to every 20½ in Ontario; to every 66 in Quebec; to every 45 in New Brunswick; to every 53 in Nova Scotia; and every 66 in Prince Edward Island.

Most Cars in Farming Districts

A survey of automobile figures of the different States of the Union indicates that, as a general rule, there are more cars owned in States where agriculture is a leading industry than in those where the industrial and the manufacturing predominate. Thus the State of Iowa, with six persons to a car, led the country in 1920, followed by California, Nebraska, and South Dakota, with seven to a car, and Wyoming with nine.

Similarly in Canada it is in the Western Provinces, where there are vast agricultural tracts and countless farms with comparatively few cities and larger centres, that the highest per capita ownership of automobiles is found. Saskatchewan, which has been a province of the Dominion only since 1905, is surpassed in per capita ownership by about twenty States across the border, Alberta and Manitoba following close behind.

This will not be surprising to those in constant touch with affairs in Western Canada, but new arrivals are impressed with the numbers of automobiles which have flooded the country in recent years. They are to be encountered at no long intervals on country roads, bearing the farmers and their families on missions of business and profit. If the presence of automobiles is an indication of sound prosperity, the rows of cars which line the streets of towns which form centres of farming districts are eloquent testimony to the West's material progress.

Motion Picture Films

A print of each of the following films issued by this department is deposited with the representatives listed on the back page. These are available upon application for use by schools, theatres, clubs, societies, boards of trade, and other associations and organizations.

Homemaking by Irrigation.—Irrigation farming in Southern Alberta, the various operations and their results.

The Land of Promise.—Featuring the well-known agricultural section of Battleford, Saskatchewan.

Opportunity.—Illustrative of Western Canadian opportunity, more specifically in the district of Lloydminster, Alta.

Livestock and Dairying.—The fine status and remarkable progress of this industry in Western Canada picturized.

Taming the Last West.—Depicting the evolution of the Canadian West from buffalo range to a modern agricultural area.

The Sunny Side of Rural Life.—The farmer on holiday, showing that life in Western Canada is not all work.

The Evolution of a Grain of Wheat.—The life of wheat seed from the time it is sown until its progeny enters into the composition of a loaf of bread.

Apple Growing in Evangeline's Land.—Orchard cult in the region Longfellow's poem made famous.

The Apple Harvest of the Okanagan.—Gathering and shipping apples in the beautiful British Columbia valley.

Curing Fish in Nova Scotia.—Depicting the various phases of curing and smoking fish in the Maritimes.

The Canadian Sardine.—The sardine caught, canned and distributed.

Some Water Powers of Eastern Canada.—The beautiful and powerful waterpowers of the Eastern Canadian provinces.

The Silver Fox Industry of Canada.—The domestic ranching of silver foxes in Prince Edward Island.

Departmental Publications

Any of the following publications will be sent free on request.

Alberta, Saskatchewan and Manitoba.—A descriptive statistical booklet on the three prairie provinces with full information on the West.

The Park Lands of Central Alberta.—Descriptive of the area tributary to the Calgary and Edmonton line of the Canadian Pacific Railway in Alberta. History, description of soils, development, lands open for settlement, and information for settlers.

Irrigation Farming in Sunny Alberta.—Full description of Alberta's irrigated lands, their progress, production and possibilities.

Business and Industrial Opportunities in Western Canada.—Full listings of industries existing and business openings in the provinces of Western Ontario, Manitoba, Saskatchewan, Alberta and British Columbia.

Canadian Pacific Reserve Farm Lands in Lloydminster and Battleford Districts.—Information of Canadian Pacific lands in these districts, history, farming information, progress, and possibilities.

Canada's System of Government.—Canadian government briefly outlined to portray its democratic traits.

The Story of Canadian Nickel.—History of the nickel mining industry.

Canadian Oil Exploitation and Prospects.—An expert engineer's history of Canadian oil development and future possibilities.

Canadian Water Power Development.—Authoritative and exhaustive survey of water power reserves and possible development.

Paper Pulp from Flax Straw.—An investigation engineer shows the possibility of the development of a new industry in the West.

A Canadian Grain Handling Plant.—How Canadian grain is stored and shipped. Authoritative article on Canadian elevators.

Value of a Settler to Canadian Railroads.—Computation from reliable statistics of a farming settler's revenue-producing worth to Canadian railroads.

Bituminous Sands of the Athabasca Region.—Description with known values, and possibilities of development of the widely known tar sands of Northern Alberta.

The New Canadian Oil Field.—Dealing with the Arctic oil region of the new strike.

Water Powers of the Maritimes.—Authoritative article on the undeveloped power systems of the Eastern provinces.

Water Powers of Manitoba.—The water powers of this province dealt with exhaustively.

Oleomargarine.—History of oleomargarine in Canada and its future prospects.

Synopses of Natural Resources.—Forty-five pamphlets dealing briefly but concisely with Kaolin or China Clay, Oil Shales, Mica, Fluor-spar, Asbestos, Molybdenum, Magnesite, Fruit, Flax Fibre, Nickel, Coal, Clays, Salt, Copper, Zinc, Silver, Gold, Pyrites, Iron, Potash, Talc, Feldspar, Platinum, Phosphate (apatite), Manganese, Graphite, Cement, Barytes, Gypsum, Irrigation, Petroleum and Natural Gas, Corundum, Sulphates of Sodium and Magnesium, Timber and Pulpwood, Fish, Fur, Peat, Grazing Lands, Mineral Waters, Building and Ornamental Stone, Whaling, Sealing, Wheat, Oats and Barley and Water Powers

The Department of Colonization and Development

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J. S. DENNIS, CHIEF COMMISSIONER,
Department of Colonization and Development,
Canadian Pacific Railway Company.

Ask the Canadian Pacific about Canada



Agricultural and Industrial Progress in Canada

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December, 1921

The Royal Arms of Canada

CANADA entered the Great War a country of somewhat doubtful and uncertain standing. She emerged from the conflict a nation, secure in her independence, standing firmly upon her own feet, the equal in council of the bodies politic of the world.

This status she won by force of arms, by the glorious achievements of her sons upon the field of battle, where, from the outset, she played a nation's part. Her people's gradual conception of this subtle change grew throughout the years of hostilities, and upon their termination Canada set her feet in the ways of peace-time progress, instigated by a new national pride and in a new consciousness of her own greatness.

It is probable that out of this recognition of new birth sprang the desire for a new coat of arms, which should be distinctly emblematic of the Dominion, and which has resulted in the new Royal Arms illustrated here. These are a variant upon the Royal Arms of England, the countries of England, Ireland, Scotland and France being represented on the shield, supported by a lion bearing the Union Jack and a unicorn, bearing the ancient arms of France. Beneath is the motto "A mari usque ad mare." (From sea to sea.)

Thus the new insignia illustrates the relationship of the Dominion to the British Empire and perpetuates the two great races which have formed the main sources of the

origin of her people. Pithily the motto suggests Canada's vast extent.

Writing on this subject, Prof. Percy E. Nobbs of McGill University says: "Whilst the feeling of the Canadian people would appear to be decidedly against titular honors and the interest in personal coats of arms is slight, many Canadian cities and towns have adopted their

own coats of arms, these in some instances being registered at the College of Heralds in London. All the provinces, both new and old, have beautiful and appropriate coats of arms, duly granted, and used to the full by provincial governments both as decorations to public printing and on occasions as flags.

"The Federal authority has, however, up till recently, been less well furnished, and the maple leaf, the beaver, the arms of the first four provinces to federate marshalled together on a quartered field, and, last but not least, a marshalled coat of arms of all the nine provinces have all been used as a symbol of sovereignty in a rather



THE ROYAL ARMS OF CANADA

indiscriminate fashion."

Now, however, a uniform emblem is decided and granted for all time, to symbolize the confederated provinces of the Dominion of Canada wherever seen or encountered.

The democratic spirit which permeates the Canadian people does not favor private titles or the universal pomp of heraldry or any phase anomalous from that true democracy which is Canadian national life. But Canadians take

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Norman S. Rankin, *Editor of Publications.*
E. L. Chicanot, *Asst. Editor.*

pride in their country being so dignified in its possession of insignia which, at the one time, symbolizes independent national status, the Empirical, partitive, and the unification of races.

General Agricultural Situation

By J. Dougall, *General Agricultural Agent,*
C. P. R., *Montreal*

Autumn conditions for Canada have been very uncertain, and it will be some time before the result of the varying weather, as applied to wheat, is known. It is generally admitted that Manitoba and Saskatchewan will have considerable wheat of the lower grade to market, but Alberta reports excellent conditions. Eastern Canada has been very fortunate, and the result of the early autumn rains has materially increased the output of all dairy products, and allowed farmers to carry their livestock later than usual before marketing. Generally speaking, conditions are satisfactory, although the very low market for coarse grains has materially reduced the farmer's buying power and will no doubt be felt in the general business conditions.

One bright spot is the market for dairy products. This is consistently holding up.

British Columbia.—The 1921 apple crop may be said to be cleaned up, after a very successful season. The crop was clean and buyers have expressed themselves entirely satisfied.

Alberta.—The season of 1921 is complete in so far as farm work is concerned. Estimates are not yet complete as to acreage, summer fallowing and fall plowing, but general opinion is that acreage will exceed that of 1920-21. Little damage from rains in this province. Grade is stated to have been best for years. The farmers are having difficulty in disposing of their oat crop owing to low prices.

Saskatchewan.—Work in this province is complete for the year. Fall plowing and summer fallowing will probably be slightly less than in 1920-21. Considerable damage has been done to wheat through rain during threshing, and farmers are holding on account of low prices.

Manitoba.—Season's work complete and estimates show that summer fallowing and fall plowing acreages will be considerably in excess of previous season.

Ontario.—The year 1921 has been rather a peculiar season for Ontario. The early part of the year was disappointing on account of lack of rains, which materially reduced the soft fruit crops and affected the apple situation also, with the result that farmers in these branches report a poor year. It was anticipated that the potato season would show a short crop, but the fall rains arrived in time with the result that there is a surplus and a drop of prices in accordance. This, with the surplus potato offerings from Western Canada, is having a very bad effect on the market.

Quebec.—Work closed for the season. This province is somewhat short of grain for feed purposes due to lack of moisture and it has been necessary to bring corn in from the United States and grain from The West. The hay situation, however, is such that the situation will be taken care of in the province. The cheese and butter output of the province will exceed that of any previous year, due to the pasture coming along with the late fall rain.

The Maritimes.—The general conditions for the year for these provinces have been satisfactory. The potato growers have succeeded in marketing a large portion of their season's output to Cuba and the West Indies. The apple situation of Nova Scotia has proved up very nicely and the growers are satisfied with the season's work. The output from Annapolis Valley is one of the largest on record.

Livestock.—The livestock situation is anything but encouraging at the moment. Beef cattle prices have been, and are, very disappointing. Farmers are trying to hold for better prices. The export market to the United Kingdom has been so low that exporters and farm organizations have experienced heavy losses. This has resulted in Western Canadian cattle shippers sending cattle south and paying duty to the United States. Little improvement in the hog situation. Prices are holding steady, but will take farmers some time to get back to the normal in this line.

Dairy Products.—The cheese and butter market and the out-turn is quite satisfactory. Farmers are receiving good prices and are endeavoring to increase their output. This is the one bright spot in the agricultural outlook for the month.

Canadian Apples First

Canada has had a bumper apple crop this year, and that the quality of the fruit has not suffered in the prolificness of production is evidenced in the recent awards at the National Apple Exhibition held in London, England. Here Canadian apple growers came into open competition with growers from all over the world and were successful in bearing away practically all the prizes and awards, winning for Canada a new fame through the products of her orchards.

The silver challenge cup, awarded to British or overseas exhibitors with the highest aggregate of points in fourteen classes, was won by the Ontario Fruit Growers' Association. Northern Spy apples from Ontario, entered as cooking

WITH the termination of another year and the closing of another volume, the Editors extend to readers of Agricultural & Industrial Progress in Canada on behalf of the Canadian Pacific Railway, the warmest of Season's Greetings, in the hope that their services have proven of value in the past and the assurance of continued endeavors to this end in the future.

apples, won the third prize of a bronze medal. One of the judges stated that this apple would have won first prize as an eating apple, being the best all round apple in the whole exhibition. The Ontario exhibits also won four first prizes of gold medals, five second silver medals, and one third bronze medal. Nova Scotia won the first prize for Starkes and Golden Russets and second for Cox's Orange. British Columbia won the second prize with Cox's Orange Pippin and the third prize for the best dessert apple. New Brunswick won two first prizes with Macintosh Reds and Snows and two third prizes with Russets and Princess Louise.

Three Million Barrel Yield

The Dominion Fruit Commissioner's Branch has estimated the apple yield for 1921 at 3,337,200 barrels as against 3,404,340 barrels last year. Nova Scotia is expected to lead with 1,300,000 barrels; British Columbia will have 1,009,000 barrels; Ontario, 960,000 barrels; Quebec, 35,200 barrels; and New Brunswick, 33,000 barrels.

Probably the two outstanding fruit producing districts of the Dominion are the Annapolis Valley in Nova Scotia, and the Okanagan Valley in British Columbia, situated at either extremity of the continent. Whereas in 1920 the Annapolis Valley produced about one and a half million barrels of apples, estimates made this year place the yield at more than two million barrels. In the Okanagan valley estimates have risen from about four million dollars in 1920 to nine million dollars this year.

The total value of Canada's apple production in 1920 was \$29,849,149 as compared with \$24,396,210 in 1919. The total yield was 3,404,340 barrels as against 3,334,660 barrels in the previous year, the increase being small and the substantial difference in values being in the main accounted for in the prices received, the average value of a barrel in 1920 being \$8.77 as against \$7.31 in 1919. Export sales amounted to 1,127,400 barrels of the value, at par rate of exchange, \$12,470,444, an average price per barrel of \$11.06. The province of Nova Scotia exported almost two-thirds of its total crop of 1920 at an average wholesale price of \$10.60 per barrel. The average wholesale price on the domestic market was \$6.25 per barrel.

Ontario Leads all Provinces

Ontario continued to lead among the provinces of Canada in apple production with a total yield of 1,621,800 barrels valued at \$13,073,765, an average price of \$8.06. Nova Scotia was not far behind with 1,169,000 barrels valued at \$10,931,420, or an average price of \$9.42. British Columbia, on the other side of the continent, the province which is fast taking the lead in fruit production, held the

third place with a production of 504,540 barrels, which at an average price of \$10.12 were worth a total of \$5,106,905. Quebec's total yield amounted to 88,000 barrels worth \$569,688, or an average of \$6.47, and that of New Brunswick 30,000 barrels valued at \$167,371, an average of \$5.78.

The total increase for the year in production amounted to 69,680 barrels over the figures of 1919 and in value \$5,452,939. The provinces of Ontario and Quebec were responsible for these increases, both recording substantial increments over the previous year whilst the other three fruit growing provinces registered slight declines.

The Government survey takes cognizance only of the five provinces noted which comprise, for all intents and purposes, the total Canadian area on which apples are commercially raised and from which an export trade is carried on. It should not be assumed, however, from the omission of the other provinces that no fruit is produced there. This side of agriculture has largely been neglected in the almost exclusive attention paid to grain growing, but apple growing is now a successful pursuit in many parts of Manitoba, and some excellent varieties are produced on the irrigated lands of Southern Alberta.

Helps All Farmers

A further tribute to the prowess of Mr. Seager Wheeler in wheat production is given by the *Olean (N.Y.) Herald* in a recent editorial. It says:—

Seager Wheeler, Canada's wheat wizard, gets thirty dollars a bushel for Early Triumph, his new variety of seed wheat. It ripens ten days earlier than any other wheat and yields eight to ten bushels more to the acre.

That helps all farmers, by increasing their possible profits. It also moves the wheat belt one hundred miles farther north, putting millions of acres under cultivation.

Wheeler, on his Saskatchewan farm, has a wheat production record of eighty-two bushels an acre. In international expositions he has won the world's championship five times.

Men like Wheeler and Luther Burbank will be the outstanding figures of our time, when a really civilized posterity re-writes history and puts wars and other things where they belong—on a back seat.

The record of Mr. Wheeler, whose farm is located at Rosthern, Central Saskatchewan, is well known to all students of agriculture.

The editor of this publication well remembers the beginning of his rapid climb to fame. In 1912, his exhibit was awarded at the New York Land Show the \$1,000 gold prize donated by the Canadian Pacific Railway for the best bushel of hard spring wheat grown in North America, and a telegram of congratulation was sent to him on his success. When the presentation of the prize was later made, at a banquet tendered to him by the Canadian Club at

Calgary, he told an interesting story of the receipt of this telegram.

"My farm, as many of you know," he said, "is situated quite a little distance from the railway station. My wife and I, that very evening, had been discussing our financial situation which was indeed anything but satisfactory. Though I had already then, won several prizes and had a surplus of potato diggers, drills, harrows, reapers and other farm implements, I lacked the ready cash to carry out experiments I was making; I sadly wondered what I should do; we went to bed late, disheartened.

"About 11 o'clock a knock on the front door sent me grumbling downstairs to see who it was; what was my surprise and joy, on opening the telegram which the boy delivered, to learn that we were richer by \$1,000 and in possession of ample means to enable me to go on with my work. It brought us near to tears and seemed the very hand of Providence.

"It taught me to have faith, and that hard work, perseverance and unfaltering courage—the essentials of all true farmers—are the surest road to success."

The Dairy Farmer in Western Canada

By F. J. Cowdery, Calgary, Alberta.

It has been said that an agricultural country can never reach its maximum state of development until its farmers engage extensively in dairying. This principle is now universally recognized, and the countries following the best farming methods are those producing the highest per capita output of milk, butter and cheese.

Western Canada has proved many times over that she can produce the best hard wheat in the world, and now she is convincing her neighbors that she can send them butter of just as fine a quality as her grain. Her farmers are gradually being persuaded that the most economical way to market their foddors and other crops is in the form of livestock and dairy produce, and practical demonstration is proving this. During the last ten years a phenomenon growth in the number of dairy cows and a wonderful improvement in the quality of dairy products has been witnessed in the Canadian West. At the present rate of progress, the permanent agriculture of these Western Provinces will, in a few years more, be devoted largely to intelligent dairy farming, with its products commanding the same respect as "No. 1 Canadian Hard Wheat" does to-day.

Before this can be accomplished, however, it is recognized that Western Canada must produce butter and cheese of a quality that will enable her to compete in the world's markets with such countries as Denmark, where the science of marketing dairy produce has been reduced to a fine art. To do this successfully, the basic product—cream—must not only be of a high quality, but the finished article for export must be of a uniform grade and adapted to the palates of the people in the countries where it is sent. This is the problem that is now occupying the attention of dairy experts in all three provinces. What success has attended their efforts may be judged from the fact that a ready market is found for all surplus produce, not only in the provinces of Eastern Canada but also in the United States and Europe.

Export Commenced Only in 1915

It was not until 1915 that even Manitoba, although the oldest of the Prairie Provinces, commenced to produce enough butter to do any exporting. In 1919, however, that province sent out 153 carloads, and during the first few months of 1920, 17 carloads of creamery butter were shipped to Chicago, one to New York, one to Philadelphia and two to Nova Scotia, besides a number of carloads to Eastern Canada and the Pacific Coast. Saskatchewan is following closely in the footsteps of her sister province, and during the first nine months of 1920, shipped 81 car-

loads of produce, 43 of which went to Eastern Canada and seven to points in the United States. From a production of just over two million pounds in 1910, Alberta now has an annual output of more than twelve million pounds of creamery butter, which is increasing steadily every year. A large proportion of this naturally finds its way to the export market.

A Government supervision of creameries, thorough pasteurization of all cream and a standard system of grading and marketing have been the chief lines along which advancement has been made. By far the greater part of the creameries are now operated co-operatively. The policy in force in Alberta is very similar to that of Saskatchewan and Manitoba, and well demonstrates the principles followed throughout.

The Principle of Cream Grading

The principle of grading cream for buttermaking was first applied in this province in 1910, under the direction of the provincial dairy commissioner, C. P. Marker. It proved so successful that by 1914 nearly 98 per cent. of the butter output of all creameries was made from cream bought from farmers on grade. This means that the farmer delivering the highest grade of cream gets the highest price. At the end of each month the farmer receives a cheque for ninety per cent. of the estimated selling value of the butter made from the cream. The Government then takes charge of the butter, grades it according to pasteurization, storage qualities and taste, and places it in storage until a favorable market is found. The identity of each particular creamery's output is not lost, however, as each case is marked with the name of the creamery and the date on which the churning was made. After the butter is disposed of, the farmer receives a cheque for the balance due him, less the actual cost of storage and marketing. The system ensures the purchaser getting the quality of butter for which he pays, while the producer obtains the highest possible price for his produce. Last year, the average price received by patrons of the co-operative creameries was 56½¢ per pound.

In addition to actively assisting the farmers in disposing of their butter, the Government also helps any group of farmers who together own a sufficient number of milch cows, to form a co-operative creamery by advancing them \$1,500 towards the cost of erecting their building. This sum of money is granted under long-time terms and upon very reasonable conditions.

Government Co-operation

The absolute practicability and value of such a system of co-operation between the Government and the farmer has shown itself in an increase of production that is remarkable even for Western Canada. In 1910, Alberta produced 2,315,000 pounds of butter, Saskatchewan, 1,548,696 pounds, and Manitoba, 2,050,487 pounds—a total of just over six million pounds. In 1920, ten years later, the production of these three provinces had increased between eight and nine hundred per cent. to 52,375,000 pounds. The total value of dairy products was more than \$74,000,000.

In produce of this kind, however, it is quality that counts. The considerable export business that is being built up proves that the butter made here will keep in storage and is palatable. But open competition is the final proof of its popularity. Last year, against the whole of Canada, Saskatchewan creameries carried off the first five prizes for the highest average scores. At the National Dairy Show at Chicago, Manitoba exhibits were awarded the Silver Medal. The same province took away five ribbons at the Toronto National Exposition, the most important exhibition in the Dominion. Alberta entries, too, have always been to the front wherever shown.

In spite of such progress, however, the dairy industry is only in its infancy in the Prairie Provinces, and there is much to be accomplished before these provinces can hope to reach their height of production. What has been

done is but an indication of what may still be accomplished. **Western Canada's most pressing need is more farmers and more stock.** To these she offers a great opportunity. For the dairyman she has cheap land, growing heavy crops of grasses and fodders, a suitable climate and excellent marketing facilities, ensuring cheap production and a good price for the finished produce. With these assets and a more closely settled population there is no reason why Western Canada should not take her place among the dairy countries of the world.

Canadian Cheese Industry

A news despatch from England announces that at the Dairy Show held recently in London, where butter and cheese makers of the entire world met in competition, the first three places in the cheddar cheese class went to Canada, the first to the Mountain View cheese factory, Ontario, the second to Ayr and Company, Montreal, and the third to the Dominion Cheese Factory, Ontario. Thus further international awards for agricultural produce have been won by Canada, and these honors now cover a range practically as wide as the varied products of the farms of the Dominion, and form the finest tribute to the status of Canadian agriculture.

Cheese making has long been a popular industry in Canada, more especially in the Eastern Provinces where it was early established with the first settlements, and the great favor this manufacture has found in the Western Provinces of recent years has to a large extent offset the decline exhibited in the East. The expansion of the Canadian condensed milk industry has been almost wholly the result of the diversion of milk from the cheese factories, and the increasing demands of the towns and cities for milk, cream and ice cream, has made greater annual inroads on the industry. Cheese making is carried on only in those districts where large quantities of milk are produced, and it is to these districts that the city milk distributors turn for supplies. The condensed milk production of Canada now amounts to about 110,000,000 pounds per year, worth \$20,000,000, the manufacturing of which is largely effected at the expense of the cheese industry.

War Stimulated the Industry

Conditions arising out of the war have, however, stimulated dairy organization in Canada, the most notable move in this direction being the widespread organization among producers. The activities of the National Dairy Council, organized in 1918, are having a wholesome influence on the dairy industry, and among other benefits anticipated is a halt to the decline of the cheese industry and its return to the important place it occupied a few years ago, a position which its wide popularity and export trade amply justifies.

In the year 1920 Canada produced 149,521,008 pounds of cheese valued at \$39,087,937. Ontario led in production with 92,847,769 pounds, followed by Quebec with 52,441,504 pounds. In order named come Prince Edward Island, 2,081,277 pounds; New Brunswick, 1,212,431 pounds; Alberta, 398,750 pounds; British Columbia, 342,053 pounds; Manitoba, 116,229 pounds; Nova Scotia, 52,638 pounds; and Saskatchewan, 28,367 pounds.

In the year 1920 there were operating in Canada 1,674 factories in which cheese solely was made, and 410 combined butter and cheese factories, making a total of 2,084 establishments manufacturing cheese. The average price obtainable for the product during the year was 26 cents as compared with an average of 26½ cents maintained throughout 1919.

A Popular Tribute

The greatest tribute paid to Canadian cheese is to be found in its widespread popularity and the foreign export market it has developed for itself, its many outlets including the outstanding dairy-producing countries of the European continent. Total cheese exports in the fiscal year of 1921 amounted to 133,620,340 pounds, valued at \$37,146,732, or practically the entire Dominion production for that year. In 1920 the figures were 126,395,777 pounds and \$36,336,863, and in the previous year, 1919, 152,207,037 pounds and \$35,223,983. Cheese is exported from Canada to the United Kingdom, United States, Belgium, Bermuda, British Guiana, Barbados, Jamaica, Trinidad, Denmark, France, Greece, Italy, Malta, Newfoundland and other countries.

During the time that, largely sacrificed to the condensed milk industry, the cheese making industry in the Eastern Provinces has recorded a decline, a remarkable development has been in progress in the newer West where the dairy industry has made such rapid strides and so firmly established itself in the agricultural life of that vast territory. Whereas in 1915 the production of cheese in the four Western Provinces was 1,118,357 pounds, in 1916 it was 1,643,850, and by 1917 had risen to 2,359,645. Due to a somewhat similar diversion of the milk, a decline is indicated in the records of the past two years, but this is regarded as purely temporary, and a return to the old footing of the industry expected.

London Award a Great Stimulus

Whilst Canada is materially no loser in the taking away from one industry to build up another, it would be regretful if the cheese industry, in which the Dominion has achieved such renown and created such a universal demand for her product, should be permitted to decline, and it is gratifying to witness indications of a return to pristine importance be-

fore serious loss has been effected. That the dairy industry is on a wonderful scale of ascending progress there is every evidence, and there still remain the widest possibilities for profit in the industry. Practically the entire output is at the present time exported, and there is no doubt that with the name it has universally won for itself, foreign markets could absorb much more. The recent awards in London must assuredly be the occasion of fresh interest in this old Canadian industry.

Christmas Flowers from Western Canada

Roses from the Canadian Prairie at Christmas time! Chrysanthemums, poinsettas and carnations leaving in their thousands to beautify and cheer points on the continent which consider themselves, climatically, far more blessed by nature! What an anomaly! In the festive season when all the world seeks floral decorations to embellish and gladden homes, churches and schools, a Western Canadian city plays no small part in providing these, and this Christmas, as on previous Christmases, the little prairie city of Medicine Hat, in Southern Alberta, has sent a profusion of blossoms all over the continent. Not only will they cover Canada, East and West, but cities of the United States will be the brighter on this holiday for the colorful touch added by these delicate blooms.

The Eden from which these flowers emanate is known as the Rosery. Fourteen years ago it was instituted with a nucleus of two greenhouses and to-day is the largest producer of flowers in the Canadian West. Chrysanthemums, carnations, violets, lilies, stocks, roses, ferns, cyclamen, flourish there, and throughout the winter months the houses of glass are glories of varied tints and perfumes. Lettuce, cucumbers and tomatoes are also grown in large quantities, but it is in the production of an abundance of rich decorative blooms that the Rosery has come to be so widely known, and created such a demand for its lovely product.

Expands Rapidly from Modest Beginning

In the original two small greenhouses, a beginning was made in the prairie city with hothouse vegetables, flowers being added year by year as the business grew and the possibilities in this line were realized. The richness and excellence of the floral product brought about an ever increasing demand which was met by the addition of more and more greenhouses, until now there are thirty-two of these buildings, averaging 250 feet in length and covering about four and a half acres. A great advantage in the development of the nursery has been the fact that Medicine Hat is situated on a natural gas field, the gas for heating being supplied at cheap rates. Six large boilers of eighty horse power each keep the plant at the

right degree of temperature throughout the winter, and it is the economic fuelling with gas which permits the product of the company to compete with the product of other nurseries at very distant points.

The status which the business of the Rosery has reached has not been accomplished without years of infinite pains and sometimes serious losses. As a pioneer industry, extensive experimentation was entailed in order to discover the best lines for Western Canadian growth, and the possibility of establishing such an industry on a firm basis must have been at times in doubt. Now, however, the nursery supplies florists throughout the Prairie Provinces and many points in British Columbia.

Through Winnipeg, Eastern Canada receives its floral provisions from the nursery, where orders are also filled for the United States. The Christmas trade this year called for ten thousand chrysanthemums, four thousand poinsettas, and eight thousand carnations. Approximately sixty per cent. of these will be sent to Winnipeg for distribution in Eastern Canada, a portion of the remainder crossing the international line to aid in the Christmas celebrations of United States cities.

Canadian Wool Goes Overseas

The first determined attempt on the part of Canadian wool growers to compete on the overseas market with the wool of Australia, New Zealand, South Africa, and South America is being made by actual sales in the London wool market. The first shipments of some seven different types of Canadian wool have been made to England by the Canadian Co-operative Wool Growers, these representing some of the best wools grown in Eastern Canada and the range area of the West. A factor in hastening this movement has been the closing of the United States market by the Emergency Tariff which provides for a duty of fifteen cents, rendering export from Canada absolutely prohibitive.

In the fiscal year 1921, wool export shipments from Canada totalled in value \$2,168,256, and in 1920, \$5,472,236. In 1921, 7,128,065 pounds went to the United States, 130,169 to the United Kingdom, and 29,689 to Newfoundland. In the year previous 8,859,682 pounds were exported to the United States, 195,081 to the United Kingdom, and 29,964 to Newfoundland. Canada has, however, always been the principal market and consumer of her own wool products and still remains so. It is worthy of note that up to the middle of October, sales of the Canadian Co-operative Wool Growers to the Canadian trade exceeded the total sales of last season by some 500,000 pounds.

Systematic Breeding and Grading

The growing trade and the increase in the home use of Canadian wools in Canadian mills

is a very gratifying and encouraging feature of the work which has been done on behalf of Canadian wool by the governments and various organizations, particularly the Canadian Co-operative Wool Growers, which is the growers' own association. The campaigns for more and better sheep, the better grading of wool, the sale and featuring of Canadian wool, are now bearing fruit in increased production and sales and in the higher qualities of the product.

Canadian wools go to England in the optimistic conviction that they will be favorably received and can compete on an equal basis with the product of the Antipodes and South America. Systematic efforts of breeding and grading have so improved the Canadian product that wool growers of the Dominion are now convinced that it is second to none on the market.

Grain Shipments from the Pacific

After years of controversy, with on the one hand ingrained conviction that Canadian grain would never leave from the Pacific coast, and on the other a sanguine assurance that ultimately this would come to pass, Vancouver is coming into its own as a port of outlet for part of the crop of the Prairie Provinces. Though the first shipment was made only last year, developments since that time, and the volume of grain in prospect for export from the Pacific, leave no doubt as to the future status of Vancouver as a grain shipping port for the product of the prairies.

The movement of the first big shipment of Canadian wheat to Europe by way of the Pacific was watched with considerable interest, and attention from many quarters was directed to its reception at the English port. There was general apprehension that the grain would suffer passing through the tropical region of the Panama zone, but, when unloaded in England, grain experts stated that grain had never been received there in better condition. Pacific coast exporters breathed easily, and saw a wonderful future opened up for the Pacific coast in sharing with the East the business of carrying the grain product of the West to Europe. Other shipments followed immediately upon the first, and by the end of the season sixteen thousand tons of grain, mostly wheat, had left Vancouver for Europe via the Panama canal.

This year shipments from the Pacific coast to Europe began just as soon as the movement of the threshed crops from the prairies got under way and the export business has been busy since that time. Grain dealers at the coast estimate that during the present season, approximately ten times as much grain will pass through Vancouver for Europe as left last season. This will amount, according to estimate, to at least 160,000 tons. There will be, it is considered, about forty cargoes.

Shipments to England and Japan

Another departure in the export of grain this year has been the shipment of sacked wheat from Vancouver to Japan. Hitherto Japan has been contented with the softer grains of the United States, but that the Canadian product is now held in high favor is evidenced in the extensive demand, November consignments to the Orient from the Pacific coast port totalling seven thousand tons. In the same month a shipment of two thousand tons will leave for England, whilst shipments commenced last year to San Francisco mills are continuing.

The success of initial export shipments of Canadian grain from Vancouver to all parts of the world leaves no shadow of doubt as to the great future of this port, lying so convenient to the Western granaries, as an outlet for a portion of their annual crop, and the success of shipment through the Panama canal to Europe is fraught with significance to the Dominion grain export movement. Every year a certain amount of congestion occurs with the enormous product of the Prairie Provinces flooding the terminal elevators and export shipping points at the same time. The heavy increases in annual production which will probably continue in greater proportion in the future, will tax the eastern ports of outlet to a yet greater extent, and the success of Vancouver shipments will considerably relieve the situation as well as substantially augment the importance of the British Columbia port.

Industrial Manitoba

As a rule we are prone to think of the Prairie Provinces agriculturally only, yet industry is developing apace with agriculture, and the manufacturing centres which spring up in the wake of land settlement are fast arriving at a position where they will be able to provide for all the needs of the farming communities. In its brief history the province of Manitoba has already outstripped in industrial importance the older Maritime provinces of New Brunswick and Prince Edward Island, and in Winnipeg, its capital, possesses the fourth most important industrial hub of the Dominion. Manitoba accounts for the sum of \$105,983,159 out of the total Dominion capitalization in industry of \$3,034,301,915. A total of 23,887 persons receiving \$23,389,681 are employed in its industries which have an annual production valued at \$145,031,510.

Manitoba has primarily been a wheat raising province and has made the name of "Number One Hard" famous all over the world. Though she is making a strong bid for prominence in other directions, her industries are largely based on her grain fields and the mixed farms of the West to which the city of Winnipeg acts much as a pivotal point. The chief industries of Manitoba, according to the last

published census, in their relative order, are flour and grist mill products, slaughtering and meat packing, butter and cheese, cotton bags, electric light and power, lumber products, bread, biscuits and confectionery, printing, coffee and spices, factory and machine shop equipment, men's furnishings, harness, machinery, mattresses and beds.

Winnipeg the Industrial Centre

Winnipeg is the principal industrial city of Manitoba, a throbbing hive of activity, with tentacles reaching into every corner of the Western plains, passing on the produce of this vast area to the ports of the East. Winnipeg has 779 industrial establishments employing 19,181 persons who are paid \$18,773,622 in wages and salaries. The total capitalization of these plants is \$82,709,029; it utilizes materials annually valued at \$77,689,693; and has a yearly production of \$118,154,995. It is the largest grain market in the world and has an annual wholesale turnover exceeding \$250,000,000. Practically all the needs of the Western Provinces can be supplied from this source, either being manufactured there or distributed through the numerous branch houses of United States and British firms.

Manitoba has several other centres of growing industrial importance, chief amongst which are Brandon, Portage la Prairie, St. Boniface and Le Pas. Brandon has an industrial capitalization of \$3,865,691 and an annual output of \$4,615,713. With a rich agricultural territory tributary to it, the grain, flour and oatmeal industries rank high in importance, whilst gasoline engines, windmills and other machinery used on the farm, account for considerable industrial activity. Nearly all important farm implement manufacturers of Canada and the United States have distributing houses there.

St. Boniface, with an industrial capitalization of \$1,353,719 and an output of \$2,851,612, has many industries, prominent among which are flour mills, brick factory, marble and glass works, abattoirs and union stock yards. Portage la Prairie, the centre of a rich agricultural territory, supplies most of the needs of the farming community and has also in its neighborhood supplies of sand and clay for brick and cement works.

Expanding Mining and Fur Area

Le Pas is the active centre of the rich new country of Northern Manitoba, whose meteoric development as a mining and fur area has been one of the most remarkable developments of the past few years. Rich gold and copper finds have been made in the vicinity, and there is apparently no doubt as to the immense wealth of this area in the future, when more adequate development has been effected. A lumber mill at this point has a monthly output of 7,500,000 feet and gives employment to 700 men.

Manitoba faces an assured future of industrial prosperity which will be necessary to keep pace with the expanding agricultural importance of Western Canada. She has all the requirements for such development. Her northland is fast revealing itself as a rich mineral-bearing area. Her water powers are enormous and little exploited, on the Winnipeg River alone there being power available to meet eight or ten times the present requirements, of which over 120,000 H.P. is now under development. Winnipeg, which has firmly established itself the capital of Western Canada, is not likely to permit this prestige to be wrested from her and will continue to effect the liaison between the East and West of the Dominion.

Export Lumber Trade

The exploitation of Canada's forests was one of the earliest established industries, almost contemporary with the fur trade in arousing interest in the new continent. As the timber resources of other countries have become gradually depleted through lavish utilization, increasing demand has been put upon Canada's wealthy possessions, so that the industries dependant upon the Dominion's forest resources still remain among the premier activities of the country in spite of the rapid progress achieved by other lines of development. The lumber, lath and shingles industry alone, in 1918, ranked as Canada's fifth industry, coming after munitions manufactures, with a capitalization of \$182,000,000 and a production of \$146,000,000. With the increase in the cut of timber and the export of raw material, has grown the manufacture and export of wood products, which now forms throughout the Dominion one of its healthiest industries and finds a market in practically every country of the globe.

The total value of the export of wood and wood products from Canada in the fiscal year 1921 was \$191,516,962, of which \$75,832,487 was represented by manufactured wood and wood products and \$115,684,475 by unmanufactured. Of the first total, \$143,248,244 went to the United States; \$32,728,353 to the United Kingdom; and \$15,540,365 to other countries. The extent to which the lumber export trade is increasing may be gathered from the fact that the total exports of wood and wood products in the previous year was \$150,057,207 and in 1919, \$106,297,738. The export of raw forest materials in 1920 amounted to \$105,353,420 or more than ten million dollars less than last year, whilst in 1919 they were valued at only \$70,380,333. Just what the export lumber trade has become in Canada in the last half century may be seen in a comparison with the figures of 1868 when the total value of unmanufactured forest products exported amounted to only \$18,742,625, and that of manufactured wood products \$71,493. The production of

manufactured forest products last year amounted to \$75,832,487, which speaks well for the increasing importance of this industry in the Dominion.

The Period of Readjustment

The termination of the Great War disclosed a serious world shortage of building, those countries over whose areas hostilities had actually been waged suffering from wanton destruction, whilst in practically all other countries construction operations ceased with the first clash of arms. In the period of readjustment nearly every nation faced an urgent need of immediate building on a large scale, and Canada, as the possessor of one of the largest supplies of raw material still left in the world, was looked to, to largely meet this demand. It has been in striving to effect this that Canada has so substantially increased her lumber export trade.

Very noticeable and distinctly significant has been the further expansion of the lumber trade in the past year, particularly the aggressive manner in which Pacific coast exporters have penetrated the foreign markets and found new outlets for their products in all parts of the globe.

Australia, New Zealand, South Africa, Japan, China, India and Egypt are only a few of the countries importing heavily of Canadian lumber. Scarcely a month passed but representatives of lumber companies have left for new fields to drum up business, whilst every boat leaving from Pacific coast ports has its timber freight bound for all parts of the world.

With growing markets for Canadian lumber have grown the outlets for manufactured wood products. This is evidenced in a perusal of the export list for the past year. Included in these are: barrels to the United Kingdom, United States, Newfoundland, St. Pierre and Miquelon; pails and woodenware to the United Kingdom, France and Newfoundland; staves and headings to United Kingdom, United States, Barbados, Jamaica and Trinidad; furniture to the United States, United Kingdom, Trinidad, Cuba, Newfoundland, New Zealand; matches to United Kingdom, United States, Barbados, British Guiana, Jamaica, South Africa and Trinidad.

Canadian Ticket Agents Convention

Canadian railroad ticket agents to the number of 150 gathered at Ottawa recently on the occasion of their annual convention, listened to addresses on all phases of railroad transportation and inspected moving picture films descriptive of Canadian scenery and industry.

Amongst the speakers was Mr. Arthur Calder, of the Executive Staff of the Canadian Pacific Railway, who, in part, said:—

Some of my audience remember much of the story that I will sketch for you to-day. Many more of lesser

age, will not. It is an old story to some, but real romance to this generation.

The Canadian Pacific Railway Co. was incorporated in 1881. At that time it consisted of a few miles of acquired lines in Ontario—a little in Quebec—and some odd stretches north of Lake Superior, starting at one rock cut and ending at another. It also inherited a bit of partially built line in British Columbia, extending from Port Moody East to about where Gladwyn or Drynoch now is. There was also sixty-six miles of prairie railway, between Emerson on the Minnesota boundary and St. Boniface on the opposite side of the Red River from Winnipeg.

The Canadian Pacific was almost invariably referred to in those days as the "Syndicate," and the "Syndicate" was given ten years to piece those fragments of railroad together and join Eastern Canada with the tide water of the Pacific at Port Moody, British Columbia. This appointed and seemingly impossible task was accomplished in four years and six months.

Now remember that in June, 1886, when the Canadian Pacific was opened for transcontinental traffic, it was a new and rather desolate path across a country with little population, other than Indians and a few whites, and not many of either. Three thousand miles of undeveloped wilderness, but with the potentials of an empire. The railway was as crude as the country was: fifty six pound rails on the prairies and seventy pounds in the mountains, wooden bridges, poor little stations and none too many of them; the equipment and power very ordinary, even for the time.

No steamships on the ocean, lakes or rivers, just two ribbons of light steel—without branch lines—but, behind it a band of enthusiasts determined to make it a success if faith and work could accomplish it. And these enthusiasts were not all on its directorate—not at all. Every man from section hand up the scale of importance in railway management, operation and solicitation, was as enthusiastic as its officers, and put his head and heart and hand into its development.

A Great Factor in Upbuilding Canada

The Canadian Pacific ranks 90% in the forces which have made Canada. It took abstract Canada into the populous centres of the earth and by its efforts made it something more than a name that conjured up snow, ice and discomfort. It made Canada a nation, proud of itself; proud of its history. It gave it attainment instead of promise. It made its people courageous, assertive, ambitious, confident, and what it did in the days of the eighties and the nineties it is doing to-day, and remains itself, the backbone, the arteries, the very vitality of Canadian commerce as well as patriotism and, incidentally, the institution that Canadians boast most freely of when away from home.

In 1881 and later, three-fourths of Canada was unknown to Canadians. The rest of the world was ignorant of it and indifferent to it. This is no longer a reproach. The Canadian Pacific now has splendidly equipped offices in twenty-five cities in the United States—offices that are a credit to Canada—all spreading the gospel of Canada and the Canadian Pacific. It is similarly equipped in the British Isles and on the Continent of Europe, likewise in Asia and Australia and I hope will soon be as well, represented in South America and South Africa.

It bestrides the narrow world from East to West, like a colossus, and is growing in influence every day. It is the great Canadian Missionary and asks the faith and support of every man interested in making this nation what all want it to be, progressive, prosperous, contented, a home for the industrious, honest and ambitious of less favored lands.

Outlook in Western Canada

*By John F. Sweeting, Industrial Agent, Western
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A fair trading business continues to be carried on with a hopeful outlook for bettering

retail conditions during the Christmas season. The improvement shown in the earlier part of September has been maintained, but at that time it was anticipated that greater developments would have taken place than those which have manifested themselves. It is known what the various causes were that constituted a check, and that while the western crop is large, the gradual diminution in price has had the effect of curtailing purchases and rendering collections somewhat more difficult than was at one time believed would be the case.

In the meantime, prospects of new enterprises are not by any means at a standstill. The Manitoba Power Company is going ahead with its new power plant on the Winnipeg River. The Calgary Power Company have under contemplation a new plant on the Bow River to develop an additional 8,000 to 10,000 h.p. The Lethbridge Northern Irrigation scheme is well under way in its construction work, while the Alberta Provincial Government has appointed an excellent committee to go fully into the questions of irrigation and other matters in the Southern Alberta territory.

Prospects for additional United States branch plants continue to be received and British firms are nibbling at Western contracts; the ice company at Winnipeg has deemed it necessary to reorganize with a view to erect a large plant for the production of 200 tons of artificial ice per day in addition to its annual natural ice harvest, while on the coast prospects are for immediate construction of the floating dry-dock at North Vancouver. The gas company at Calgary is already working on its 15 miles of pipe line to connect its main gas pipe with the Dingman field, thus giving additional natural gas to the city of Calgary. Other developments include the opening of branch wholesale houses and in many cases extension of premises to take care of expansion of business. In some cases there has been consolidation of interests, and a general effort to curtail operating costs is very noticeable.

A Distinct Revival likely

Whilst it is not generally believed that any immediate change in the bettering of existing conditions is about to take place, there is a more hopeful outlook towards the settlement of some of the more important problems which must be felt in the West as elsewhere. Sanguine views are held in this relation, and with the consummation of such hopes a distinct revival is likely to be noticed in which the West will share to a very large extent. As has been stated many times before in these monthly notes, the West is less affected and recovers more speedily than more thickly settled countries.

Throughout the fall continued efforts have been made to take care of unemployment, and during November, in Manitoba, a survey was

made to ascertain to what extent the farmers could provide winter work for some six or seven thousand applicants. Of course, each winter brings this problem, but it has never before been taken in hand so thoroughly and with greater cohesion among the Western Provinces than it has this year, making it very evident that every effort to find jobs for all unemployed is being carried out with the utmost diligence. At the time of writing it is quite possible that the situation will be well cared for.

Looking back over the past eleven months it will be seen that many disappointments have had to be met and that the optimistic predictions of the earlier months did not in their entirety materialize. Yet this notwithstanding, substantial progress has again been made. While prices for farm produce on the prairies were below what was anticipated, a very large amount of money is being realized to take care of immediate commitments and requirements for next year's efforts. In British Columbia, apple and fruit growers had a good season. As a matter of fact the apple crop of the Okanagan was one of the best, giving to the growers their third successive wealth-producing crop. The crop was handled and packed with expedition, finding a good market as far east as New York.

Fur Farming Expands

Through the medium of this bulletin encouragement has been ceaselessly given to fur farming in Canada and constant endeavor been exerted to point out the many opportunities which lay in this direction. That the stimulus it was attempted to impart and the inducement held out to those contemplating this novel branch of agriculture were amply justified by circumstances and conditions, would seem to be borne out by the record of expansion the industry has undergone in the space of a single year, as well as the tendency of the prices of raw furs to rise substantially, those at the fall auctions ranging from twenty to forty per cent. higher than in the spring.

According to returns made to the Canadian Bureau of Statistics during 1920, there were in Canada at the end of that year a total of 582 fur farms, in comparison with 419 twelve months previously. In the same short span the value of the animals on Canadian farms had increased from \$3,088,923 to \$4,632,605, or roughly fifty per cent. A total of 573 fox farms at the end of the year compared with 414 in the previous December, the number of mink farms had doubled, and a Karakul sheep ranch came into existence. The value of the land and buildings on these 582 farms amounted to \$1,178,788.

Prince Edward Island Leads

Of the total number of fur farms in Canada in 1920, Prince Edward Island claimed over one half, having 306 within the confines of the little

island and leading all the Canadian provinces in the industry. Quebec was next in importance with 79 fur farms, followed by the two Maritime Provinces, New Brunswick and Nova Scotia, with 57 and 55 respectively. Ontario had 41; Alberta, 15; the Yukon, 14; British Columbia, 11; and Manitoba and Saskatchewan, 2 each. Every province in Canada without exception, shows a substantial increase in the number of ranches and the number and value of the animals they contain over the previous year, the number of farms having doubled in New Brunswick and quadrupled in Ontario.

On the fox fur farms silver foxes numbered 13,405, value \$4,466,117; patch foxes 1,103, value \$87,735; and red foxes 373, value \$11,810. Of the foxes born in captivity, 9,219 were silver; 788 patch; and 305 red. Miscellaneous fur-bearing animals born in captivity numbered 262. The total value of fur-bearing animals sold from the farms in Canada during the year was \$745,021, and the value of the pelts sold was \$383,835. Taking for each farm the average selling values, live silver foxes ranged from \$100 to \$1,100, and silver fox pelts from \$75 to \$750.

First Survey of Domestic Industry

The year 1919 was the first in which a survey of the domestic fur industry was conducted, and the expansion which has been noted in the ensuing year is an indication of the great opportunity awaiting in this line of activity. With a past history which is largely that of the fur industry, Canada has an unassailable reputation for all that is best and richest in peltry, a fame which has largely contributed to building up so speedily and substantially a Canadian national fur market. Canada's most notable progress is in agriculture, and in the expansion of settlement the haunts of the creatures of the wild are brought under the plough. The only remedy is that of domestic ranching, and by every indication this industry faces a very profitable future.

Across Canada—Hamilton

Among the first industrial centres of Canada is the city of Hamilton, termed the "Birmingham of Canada," sixth among the cities of the Dominion in order of population but third in point of manufacturing importance. It has a most ideal civic setting of both beauty and utility. Picturesquely situated on Hamilton Harbour at the Western extremity of Lake Ontario, Hamilton is fairly old as Canadian cities go, being founded in 1813 by George Hamilton and settled largely by United Empire Loyalists and those who fought in the War of 1812. Behind the city is the mountain or escarpment which extends from Niagara Falls, forty-two miles to the east. From this, looking over the city below, one obtains a magnificent view of the gorgeous fruit garden of the Niagara district,

a picture of rare beauty, equalled on few parts of the continent.

From a commercial point of view the city could not have a better location for business intercourse with both sides of the border. Its facilities of communication both by water and rail are excellent. It is a regular port of call for steamship lines operating between Montreal and the head of Lake Superior. It is on the direct line of main railways running from Buffalo and Niagara Falls to Detroit and Port Huron, Buffalo and Niagara Falls to Montreal and Detroit, and Port Huron to Montreal. Seven Canadian and United States railroads give it ready and intimate touch with all parts of the continent and it is the hub of a complete electric railway system for city and suburban travel.

Essentially a Manufacturing City

Hamilton is essentially a manufacturing city, possessing the economic conditions required by large industrial concerns for favorable operation. It has a practically unlimited supply of electric energy from large companies economically generating power from Decew Falls, 35 miles, and Niagara Falls, 42 miles distant. Manufacturing establishments at the end of 1918 numbered 685, employing 30,944 men and paying them in wages and salaries \$31,901,388. These plants were capitalized at \$142,336,442, using materials to the value of \$114,258,586, and with a production value for the year of \$188,154,995. The city's blast furnaces, steel plants, coke oven plants, plough works, agricultural implement works and wire fence works are amongst the largest in the Empire. Other industries are wood-working machinery, electrical apparatus, washing machines and wringers, hardware, silverware, clothing, hosiery, boots and shoes, furniture, etc.

The city's area of 7,143 acres is laid out with due respect to beauty and utility, interspersed with charming parks and open spaces, whilst handsome and adequate public utilities serve the community's needs. The traveller is accommodated at several up-to-date hotels, and the nearby summer resort of Burlington Beach, of great natural beauty, serves the holiday maker. The market square is celebrated. There are 31 banks, 83 churches, 53 educational establishments, 3 libraries, 5 hospitals and excellent play and sport grounds.

The city of Hamilton has wrought for itself a position in Canadian industrial life which is unassailable. This it steadily maintains through ceaseless advancement, giving promise of great manufacturing fame in the sure progress of the Canadian Dominion. In 1901 its population was but 52,634; in 1911 it was 81,969; by 1919 it had increased to 108,143; and the census figures this year will undoubtedly show still further growth. The total assessed value of taxable property in the city is \$87,157,890. The third city of Canadian industrial activity,

Hamilton bids fair to maintain her proud position as Dominion manufacturing grows.

A Canadian Bookshelf

By R. J. C. Stead, Ottawa, Ont.

Canadians have been so busy with the material problems of nationhood that it is not surprising if the deeper and more abstract qualities which go into the making of a great people have received less consideration than is their due. The average Canadian recognizes the empire builder in the railroader, the lumberman, the prairie pioneer, but he is not so quick to recognize the empire builder in the poet, the novelist, the artist, the musician. Yet without literature and art we can have no enduring nationhood. So far as Canadianism is concerned the time and money spent in building railways, in clearing forests, in developing lands, are wasted unless out of these transient stages in our development comes an idealism which shall give us permanency among the nations of the world. Such an idealism can be expressed and perpetuated only by means of a distinctive Canadian literature.

A National Literature

Canada's position in her attempt to develop a national literature is a peculiarly difficult one. Her proximity to the United States subjects her not only to an intense commercial rivalry which permeates the book business as much as any other line of trade, but to the more subtle and seductive danger that her successful writers are lured into writing, not for Canadians, but for Americans. The rich financial returns offered for book rights, magazine rights, and motion picture rights by the immense market of the United States, are a very real temptation to the Canadian author. They tempt him to go to the United States, or, if he does not physically leave Canada, to write with American approbation in view, which is the same thing so far as the development of a literature which shall express a distinctive Canadian idealism is concerned. Yet without such a literature there cannot, ultimately, be a Canadian nation.

No Vision without Literature

I think I am safe in saying that the average Canadian author does not regard money-making as the chief end of man. If he did he would go to the United States. What he does seek is the sympathy, and, so far as he may be able to deserve it, the approbation of the people of Canada. He wants them to understand that he—the author—is absolutely indispensable to their national development; more indispensable than railways or factories or mines or farms or any material thing whatever, because without a vision the people perish, and without literature there is no vision.

When the Canadian people realize this fundamental fact they will be wise enough to see to it that Canadian literary talent receives such an appreciation at home as will encourage it to its fullest and finest expression. For the moment the means to this end seem to be an active and intelligent interest in Canadian books and the starting of a Canadian bookshelf in every Canadian home.

Canadian Pacific Films

Editorial from the Montreal Gazette

Those responsible for the management of the Canadian Pacific Steamships, always up-to-date, and ever mindful of the comfort and convenience of their patrons, have just arranged for all their trans-Atlantic steamships to be fitted up with cinematographic outfits, which will add considerably to the entertainment of ocean travellers, besides offering educational facilities of a very high order. This new departure is to be equally available to those travelling steerage as in the saloon.

"The films to be used on Canadian Pacific steamships are of the non-inflammable kind, eliminating any possible danger from fire, without which absolute assurance the new departure would never have been considered. The steamships will give three performances, lasting about an hour, on each voyage, on both eastbound and westbound trips. Though the pictures shown at the outset are of the type usually termed 'educational' and 'scenic' in their appeal, it is intended later to vary the programme with comic and feature films of other origin, which will compare favorably with those shown in the best theatres."

All the pictures to be screened will be characteristically and distinctly Canadian. The Canadian Pacific are to be congratulated on such a far-seeing policy which will give immigrants on their way to Canada an opportunity of acquiring a definite knowledge of the country for which they are destined, and tourists and other passengers will find in the films an additional diversion and amusement during the trip. Canadian life will be depicted in a comprehensive manner through agricultural, scenic, travel and industrial moving pictures, which are the product of one of the newest Canadian industries, manufactured by the Associated Screen News of Canada, of Montreal.

New Triumphs

"The movies" have achieved new triumphs in many directions. Pictures at all times before the introduction of the cinema have been a boon and a blessing to men. We learn in this connection that books of pictures for the blind have been invented, whereby those who sit in darkness may, with sensitive and trained fingers, get an idea of the proportion and appearance of some of the world's largest buildings and illustrations of that sort. This, in itself, marks an important advantage in bringing comfort and delight to a grievously handicapped victim of the community. Rome linked together the ancient and the modern world; and Virgil, more than any other mind, effected the spiritual part of the liaison. He absorbed all Greek poetry and philosophy and fused them with his own experiences. It is now suggested that Virgil and Dante should be filmed and used as "back to the land" propaganda by the British Government. Certainly Virgil was a figure in literature, compared to a light shining between ancient and modern civilization, and his accession to "the movies" would be a distinct acquisition.

A newspaper critic in London, after a visit to one of the picture theatres there, is thoroughly satisfied that, after the rehearsal of the experiment put into practice of a wonderful picture-talking machine, reckons that in two short films he was able to maintain perfect time between the "voice" of the gramophone and the "life" movements of the players on the screen.

A Commendable Innovation

If this new departure materializes into a sufficiently perfect arrangement, it may tend to further revolutionize the moving-picture business. "The movies" have been suggested in some quarters as a new method of increasing attendances at the church services. Some people might regard "forced" church attendance as hypocritical and of little moral use, but apart from that the fact is recognized that churches cannot carry on with the equipment of two or three generations ago. It will be a matter of consideration, no doubt, whether Christ's Gospel can be presented in the days to come by means of moving pictures. All this by the way. The Canadian Pacific Steamships have brought into effect a commendable innovation that calls for a warm expression of approval, by the installation of "the movies" on their palatial hotels afloat.

The Swiss in Canada

The probable locating very shortly of a silk plant in Toronto by Swiss capital as the nucleus of an extensive industry to be built up around this foundation, with the establishment at various points in the Dominion of colonies of Swiss workpeople, naturally raises the question of the desirability of this mountain-loving race as nation builders, their properties of assimilation, qualities of citizenship and success in lands in the making. Immigration from Switzerland to the American continent has never been relatively very substantial in numbers. The little republic has progressed generally in an enviable manner, a contented and comfortable little cosmos where there were few instances of great wealth, no appearance of great ease or luxury, no rich or arrogant aristocracy but with practically every head of a family, however humble in circumstances, possessing a home of his own. An emigrating tide does not spring from conditions such as these, and so the Swiss people has never featured to any large extent among the new entrants to the countries of the American continent. The war has brought Switzerland her share of unrest and depression in which Europe has been plunged, and emigration to new fields is in greater favor than formerly.

A High Type of Citizen

Canada's experience of the Swiss people as settlers has been comparatively limited, but sufficiently gratifying for the Dominion to take advantage of any economic trend of affairs which will send to her shores more people of the little mountain republic. They are universally considered as producing a high type of Canadian citizen, and class among the most desirable groups of immigrants Canada has drawn from. In the period from 1901 to 1912 only 1717 of these people came to Canada, a proportion arriving via the United States. Canada's Swiss population in 1911, the time of the last census, was 6,625, or .09 per cent of the Dominion's people. In the last fiscal year ending March 31st, 1921, the total Swiss immigration was 261, 215 entering by ocean ports and 46 from the United States.

The first Swiss settlers to arrive in Canada were brought out under the auspices of the Hudson's Bay Company by a Colonel May, a native of Berne, who had spent a considerable time in the company's service in Canada. They arrived on ships of the company at York Factory in August, 1821, and settled along the Red River near Pembina. At a later period several left for Minnesota, settling where St. Paul now stands, and being the first settlers there. About the year 1886, other Swiss colonies were established in Eastern Assiniboia at Alsace, Bismark, Hohen-Holme, and Esterhazy all now thriving farming settlements, renowned for their rich and extensive agricultural production.

Settler a Thriving Example

A further example of Swiss success in agriculture is instanced in that rich farming territory surrounding the town of Stettler in Central Alberta, where some years ago four Swiss farmers settled, locating ninety miles from the nearest railroad at that time. With a joint capital of one hundred dollars they introduced wheat growing into this section of the west which is now one of Alberta's first producing areas. They were the vanguard of many other Swiss agriculturists, some of whom came from the United States, who settled about them, worked intelligently and manfully and have won through to comfort and prosperity. A similar history of successful Swiss agricultural colonizing is that of the settlement at Notre Dame de Lourdes in Manitoba.

The Swiss are uniformly good citizens at home, and, bringing with them to a new country a regard and respect for law and order, for equitable government, and harmonious social relations, are almost without exception good citizens in Canada. Practically all the Swiss in Canada are naturalized Canadians, assimilating the national spirit rapidly, and working for the development of the Dominion along the soundest of economic lines. Canada can look without disquiet upon the projected settlement of industrial workers of the race which has so successfully followed agriculture here.

Canada and Her Returned Men

Warm tribute has been paid Canada by many countries for her generous treatment of her returned soldiers from the Great War, and several have taken pattern from the methods she devised for their re-establishment into civil life and the means of reinstatement effected towards overcoming the handicap of the years lost whilst engaged in arms, apart from the sufferings undergone and the wounds sustained. Though actual hostilities are well put behind now, Canada's annual expenditure in respect of her returned soldiers still amounts to a tremendous sum as the work of assimilation into civilian pursuits continues.

Canada's annual pension list amounts to \$30,802,608, payable to 50,287 disabled soldiers and 19,411 dependents. These include allowances for 25,413 wives, 34,721 children and 178 parents of disability pensioners and 16,142 children of dependent pensioners. Up to June 30th of this year 20,126 additional pensioners had accepted final payment of their claim, an adjustment which cost the Government in all \$8,127,052. The total amount paid out in pensions up to August 31st last was \$101,414,216.

According to the report of the Soldiers' Settlement Board at June 30th, the number of soldiers' loans approved to enable them to go on the land was 20,465 and the amount of money advanced \$83,884,210. Of this amount \$46,000,000 was for the purchase of land, \$26,000,000 for the purchase of stock and equipment, and the remainder for implements and the removal of encumbrances. Of 12,233 liable for repayments to the board in June, 9,302 had met their obligation, 1,416 had made payments in advance of their liability, and 390 had paid off their debt to the Board in full. The total area of free and purchased land held by soldier settlers is 4,854,799 acres, and up to June 30th the settlers had broken approximately 600,000 acres of new land. In 1920 the grain crops produced by them were valued at \$10,000,000.

Over 50,000 Men Trained

Following vocational training carried on by the Department of Soldiers' Civil Re-establishment, which had taken care of 51,455 men up to August 31st, loans have been made to some of the students for the purchase of tools and equipment, and also to university men to enable them to complete their courses. In the case of 2,271 approved applications for such loans, \$623,857 has been advanced.

A system of life insurance for returned soldiers, without medical examination, was devised and went into effect on September 1st, 1920. Since that time 5,636 veterans have taken out policies ranging from \$500 to \$5,000, the aggregate amount of the policies being \$15,410,000 and the premium income \$189,240. Up to September 30th last, seventy-one claims had been paid totalling \$185,862.

For the six years ending June 30th, 1921, the Department of Soldiers' Civil Re-establishment has expended \$105,159,531, of which some \$15,000,000 only went into buildings, equipment and furnishings. The total outlay for war service gratuities, paid to soldiers on their return according to length of overseas service, approximated \$166,000,000.

Western Canada Farm Mortgage

Five million dollars were invested by United States interests in Western Canada farm lands in 1920, indicative of the interest and appreciation across the international border of the

Dominion's rich area lying west of the Great Lakes. With increasing knowledge of the Canadian West, which perforce breeds boundless faith in its soundness and assuredness of its greater prosperity in the future, has come a profound and widespread conviction that this territory offers one of the best possible outlets for the investment of savings or for speculation. A favorite form this has taken has been the farm mortgage, years of experience having proved the profitableness and impregnability of money invested in this manner in the Canadian West. Many investors in the United States, from their previous acquaintance with this manner of investment, or from personal visits to the territory in question, refuse other methods of placing their savings, secure of the best of results in the proved prosperity and integrity of Canada West.

To one unacquainted with the situation it may possibly suggest itself that a farm mortgage is an indication of insecurity and imminent calamity merely impeded, and as such a reflection upon a country's prosperity, but a little reflection will prove the exact reverse. Whilst it is acknowledgedly inadvisable to enter upon the pursuit of farming, even on the cheap lands of Western Canada, without certain monetary resources, it cannot be denied but that hundreds of farmers have the minimum of financial backing when they file on homesteads and make a beginning. They naturally do not achieve the same rapid or substantial progress as those who commence with greater capital and their first years do not show a great deal of profit. But the time soon comes when the farm is fully proved and owned and assures a definite income, and the owner feels justified in adding the equipment necessary to conduct it in the most efficient manner and also to provide a more comfortable home for his family.

Methods of Securing Credit

The arrival of such a stage frequently in farming operations and the advisability and desirability of financing farmers at such periods is universally recognized, though opinions on the methods of effecting this may differ. In some cases banks arrange to loan money; certain of the provinces have arranged for rural credits; in others the same object is achieved by the farmers co-operatively. Another system is the farm mortgage, through which the farmer may receive money on his farm to purchase machinery or proceed with the erection of a house or farm buildings. He regards the interest he pays not necessarily as a burden but as an opportunity to hire capital for a fraction of what it yields him in increased production.

It follows that those farmers will make the most productive use of capital who operate in sections where the cost of production is least in proportion to the value of the crops produced, and since land is the chief element in the pro-

duction of farm crops, the most productive farming is where fertile land is the cheapest. This is the feature which makes the Western Canadian farm mortgage so attractive to investors.

Mortgage companies state that loss is practically impossible in dealing with Western Canadian farms. Land values in Canada are continually increasing. Last year the average price of land over the Dominion rose to \$48 per acre from \$46 the year before, whilst in 1915 the value was only \$35. This land is the security for the mortgage, so far from being depreciable being in fact on a steady trend upwards, the securest basis an investment could have.

To the average investor, content that his money is safe against loss, there is a less material side to the investment. He has the gratification of knowing that his savings are working to such good end. The prosperity of the world is dependent upon the agricultural industry, and in addition to paying a regular and handsome interest, the capital invested is aiding some farmer to increase his production of the crops the world is very much in need of.

The Labor Situation

The situation in October as reported by the Department of Labor was on the whole most gratifying in its various features that has been reported for some time. Reports received from all over the Dominion indicated a somewhat greater volume of employment. The cost of living, as indicated in the weekly family budget, fell somewhat. There was less time loss due to industrial disputes than in the previous month or the corresponding month of the previous year.

Ontario and Quebec reported steady increases in employment. In the Prairie Provinces there were slight fluctuations but the movement was on the whole favorable. In the Maritime Provinces and British Columbia, on the other hand, there were slight shrinkages in employment. The most important features in the period under review were the gains in the volume of employment afforded in the logging and textile groups. Offsetting this to some extent were pronounced losses in sawmills and fruit and vegetable canneries. The transportation group, rubber, leather, iron and steel, and coal mining all afforded increased employment. Pulp and paper factories, summer hotels, retail trade and building construction continued to report curtailment in operation.

Index of Wholesale Prices Drops

The Departmental index number of wholesale prices was down to 229.8 for October as compared with 232.7 for the previous month. The chief changes for the month were declines in prices of grain, livestock and meats and in miscellaneous

foods and groceries, but there were also declines in fish, leather, house furnishings, drugs and chemicals. There were slight advances in textiles, gasolines, and coal oil and seasonal advances in eggs and milk.

In retail prices the cost of a list of twenty-nine staple foods in sixty cities averaged \$11.48 at the beginning of October as compared with \$11.82 in September, \$15.83 in October, 1920, and \$7.99 in October, 1914. The chief changes in the month were declines in potatoes, meats, cheese flour and bread, but there were increases in eggs, and butter. Anthracite coal and hard wood advanced slightly, but soft coal, soft wood and coal oil declined to an extent.

No new strikes were reported during the month but sixteen carried over from the previous month involving during the period some 2,229 workpeople and resulting in a time loss of about 54,704 working days. None of these strikes were reported as having terminated during the month.

Reported Discovery Iron Ore

By G. G. Ommanney, Investigation Engineer, C.P.R.

The press has recently announced the discovery by Messrs. E. A. & N. C. Butterfield of large deposits of iron ore on the shores of Lake Athabasca in Northern Alberta stated to contain many million tons, the ore carrying a high percentage of iron. The territory in which this discovery is reported to have been made has been the subject of some investigation by officials of the Dominion Government, Department of Mines, and is referred to by Professor John A. Allan of the University of Alberta. This reference concludes with the following words:—

"The district is worthy of further investigation by a careful prospector, as large bodies of iron ore might be found in the iron formation in the Tazin series of rocks."

Last summer Mr. E. A. Butterfield accompanied by his son spent a few months on the north shore of the Lake in the vicinity of Black Bay. They claim to have discovered an enormous deposit of iron ore, and have staked six or eight claims on the east side of Black Bay which lies east of the fourth meridian in the Province of Saskatchewan. The Butterfields brought out some surface specimens.

Officials of the University of Alberta have examined these ore samples and pronounced them to be hematite of excellent quality having the following analyses:

Silica.....	21.36	20.94
Iron Oxide.....	70.58	70.84
Phosphorus.....	0.029	0.031
Sulphur.....	0.063	0.082
Equivalent in iron of above Iron Oxide	49.40	49.58

It is important, of course, to remember that these are analyses of hand specimens, but if they represent the general tenor of the ore, a

deposit of great commercial value has undoubtedly been discovered.

Mr. Butterfield is confident that the deposit is of very vast extent, claiming to have estimated 154,000,000 tons. This tonnage, if verified by subsequent systematic blocking out, should not be difficult to transport to suitable reduction points accessible to markets. The deposit has direct water communication with existing railhead on the Alberta and Great Waterways Railway, and is sufficiently near to the vast coal fields of Alberta to make the reported discovery of peculiar interest to the steel and iron industries.

Both in Eastern and Western Canada there are known to be large deposits of low grade iron ores, but all require more or less costly treatment to enable them to be mined and smelted.

Canada imports 95 per cent of the ore smelted in its blast furnaces and also imports over \$125,-000,000 worth of steel and iron products.

Hence it is of the first importance that this new discovery, which indicates possibilities of a high grade hematite ore body, should be given the closest investigation either by official departments or private enterprise, through the agency of fully qualified mining engineers, next season, and it is to be hoped that such investigation will be undertaken.

The Value of Canada's Fisheries

As a land surrounded on three sides by water, its area profusely dotted with lakes of varying dimensions from the small crystal depression of a few acres to the mighty bodies of square miles of surface, and a veritable network of rivers and streams, the fish naturally plays a somewhat important rôle in Canadian economic life. These waters contain a wide diversity of species, and the yearly toll of the seas and inland waters accounts for a handsome sum in the nation's revenue each year. On either coast the sea fisheries give continuous employment to thousands of men each year, and dependent industries such as canning, drying, salting, and smoking, to other thousands. The commercial exploitation of the inland lakes is increasing each year and swelling the revenue derived from the fish traffic.

Every section of the Dominion shares in the wealth of fisheries, though some are producing in a greater extent than others, and each province has a substantial amount each year derived from this source. The total values of commercial fisheries production in 1920, according to the Dominion Bureau of Statistics, was \$49,321,217. British Columbia accounted for \$22,139,161; Nova Scotia, \$12,742,659; New Brunswick, \$4,423,745; Ontario, \$3,410,750; Quebec, \$2,591,982; Prince Edward Island, \$1,714,663; Manitoba, \$1,249,607; Alberta, \$529,078; Saskatchewan, \$296,472; and the Yukon, \$33,100. These amounts do not, however, by any means

represent the value of the fisheries to the provinces, and in her possession of one of the world's greatest and most prolific fisheries, Canada has an asset of inestimable value.

Inland Waters Great Source of Revenue

It would be difficult, for instance, to estimate the worth of the inland waters of the Dominion in the power they possess to draw sportsmen from all over the world year after year. Practically every province of Canada has its favored waters, which each year are the holiday destinations of tourists and fishermen who never miss this annual pilgrimage to fish their favorite pools and whip their seductive streams. Their lure never fades because they never become understocked or depleted, an ever-watchful government department guarding religiously against this danger by an aggressive campaign of fish culture.

Again, the figures published by the Government do not include the great quantities of fish caught by Indians, lumbermen, trappers, settlers, etc., of which it is not possible to keep record, but which constitutes one of the most valuable phases of the bountiful natural gift. So diffuse are Canadian lakes, so interwoven her rivers and streams, that there is no farming settlement far from a fish supply in the shape of some body of water or waterway, and each farming settler has at his command a source of food as well as a means of pleasing diversion, whilst often this becomes a commercial business with profitable revenue. The amount of white-fish, pike, pickerel, perch and trout consumed in this way is very large and quite untraceable for purposes of record.

The inland lakes of the North-West are fished extensively by the Indians, to whom their product forms a main source of sustenance. Lumber camps, survey gangs and exploring parties all count on the giant water ways to provide them with a portion of their fresh food, whilst the fish is to the trapper both food for himself and his dog team.

The figures of revenue from commercial fishing in Canada do not by any means represent the value of her fisheries to the Dominion, and should every utilization of their product be taken into account, they would be found to be amongst the first of the country's natural resources.

Going to the Prairie for Trees

One does not go to the Arctic for fruit nor seek furs in the Tropics, and the last place on earth the average individual would think of securing trees would be the Canadian prairies. The very word conjures up a picture of vast stretches of interminable treeless plains, for a great section of the people of the continent are unaware of what a misnomer the term is, and

how these plains, made to glow golden with the first grain of the continent, have been beautified by the extensive planting of trees of every sort, which thrive lustily as if sprung naturally from the soil.

That a wide demand does come to the Canadian prairies for trees is evident in the history of the Prairie Nurseries in Saskatchewan, the largest nursery concern in Western Canada and claimed to be the largest grower of Caragana and Russian Poplar in the world. Not only have millions of trees been sent out to cover the Prairie Provinces from the nursery, but their product is shipped as far east as Fort William and as far north as the Peace River Country. Nurseries in British Columbia and Ontario also purchase considerable stock from it, and shipments of considerable size have been made to the United States, these including in the past year, 140,000 Caragana and 80,000 Box Elders or Manitoba Maples.

Millions of Trees Distributed

The nursery, which is near the city of Estevan, covers four hundred acres, practically all of which is under cultivation. Started in 1911 on a very small scale, the present management took over the nursery in January, 1913, when there were only a few acres cultivated. Each year since that time the acreage under cultivation has been greatly increased, and the number of young trees which have left its parent soil runs into many millions.

The greater part of the nursery is taken up with plantations of the hardiest trees and shrubs, Russian Poplar, Laurel Willows, Manitoba Maples and Caragana. A beautiful new shrub, the Russian Olive, is grown largely for hedges, also the Buckthorn, but the Caragana is the most popular and 3,000,000 seedlings of this variety were grown this year. A large stock of the hardiest apples, plums, cherries and small fruits is grown, with the demand increasing every year. The demand for fruits and ornamental shrubs taxes the utmost resources of the nursery, especially currants, raspberries, and strawberries.

The nurseries give employment to a large staff of men, there being thirty-five salesmen and a veritable army of gardeners during the rush seasons. Schools are held each year giving instruction to the salesmen in landscape gardening and horticulture, with special attention to the planting and care of nursery stock.

The Christmas Tree Industry

Canada, with a considerable range between her winter and summer climates, has in consequence many industries which are purely seasonal in character. Among them is one of the briefest period of activity but which, for the few days of its operation, carries greater joy and pleasure into the world than any other pursuit, and is one of the few lines of commerce which the juvenile population would consider indispensable to the well-being of the country.

This is the Christmas tree industry, which is responsible for putting the little spruce tree into the homes of the continent. For weeks past woodsmen have been busy in the woods of Canada and cars of the little trees going down across the border to the cities and towns of the United States. This winter a bit of Canada will go into the homes of the entire continent though not all will know or recognise it.

The Christmas tree idea was continental in origin, though America with its deep-breasted valleys, its canyons, and citibanks clad with spruce and pine would suggest itself at once as the home of the custom, and the institution might have been created expressly for the children of the American continent. The United States as she grew and expanded found she required her trees for less romantic and sentimental purposes and, it must be confessed, used them in a rather lavish and profligate manner, not always seeing that when a Christmas tree was cut down to cheer somebody's Christmas there was one planted in its place for a Christmas to come.

The time came when there were too many homes or not enough trees and the United States called upon Canada, which had not so many homes and a great many trees, and for years the Dominion has been sending her them across the border to decorate the homes and gladden the holiday of the children of the Republic. And Canada is profiting by the example of other countries. Her policy is to put back a tree where one has been cut, to have her Christmas trees for years to come and to cheer the Christmases of future generations of children of the continent.

Education in Canada

One of the uppermost considerations in the mind of a head of a family contemplating the step of migrating to a new land is the educational facilities it offers to his children. In the misconception which exists among certain uninformed sections of people of Canada as a land of primitive conditions just struggling from its natural created state, there is naturally a total lack of appreciation of the high standard of education in the Dominion, and it is regarded as being necessarily in the most elementary stages of progression. Nothing is farther from the truth, and with the realization of the Dominion as the most up-to-date and progressive of modern nations, the splendid modern schools, the high type of educationalists and the lofty ideals instigating them create surprise and wonder.

It may be dogmatically stated that no country is more actively interested than Canada in ensuring its children are given every chance and that facilities are provided for an education adequate to equip them to enter upon the work of their later life. Attendance at school is compulsory; school boards and other corporate bodies exert themselves to see that the law in this respect is carried out; and in their work, they have almost invariably the active co-operation of the parents of the country. Possibly in no other country does such a large proportion of the nation's youth extend its learning into the secondary grade and the university. Given the active sympathy and early assistance of the parents, no child has greater educational facilities than the Canadian, born or raised.

The British North America Act

Under the British North America Act of 1867, the right to legislate on matters respecting education was reserved exclusively to the provincial legislatures, subject to the maintenance of the rights and privileges of the denominational and separate schools as existing at the time of union or admission of the provinces. In general, throughout Canada, there are two fundamental systems of education: one that of the Protestant communities free from the control of religious bodies, and the other that of Roman Catholic communities in which education is united with the religious teaching of the Church.

In all the provinces the cost of education is defrayed from the public revenue, provincial or local, and public

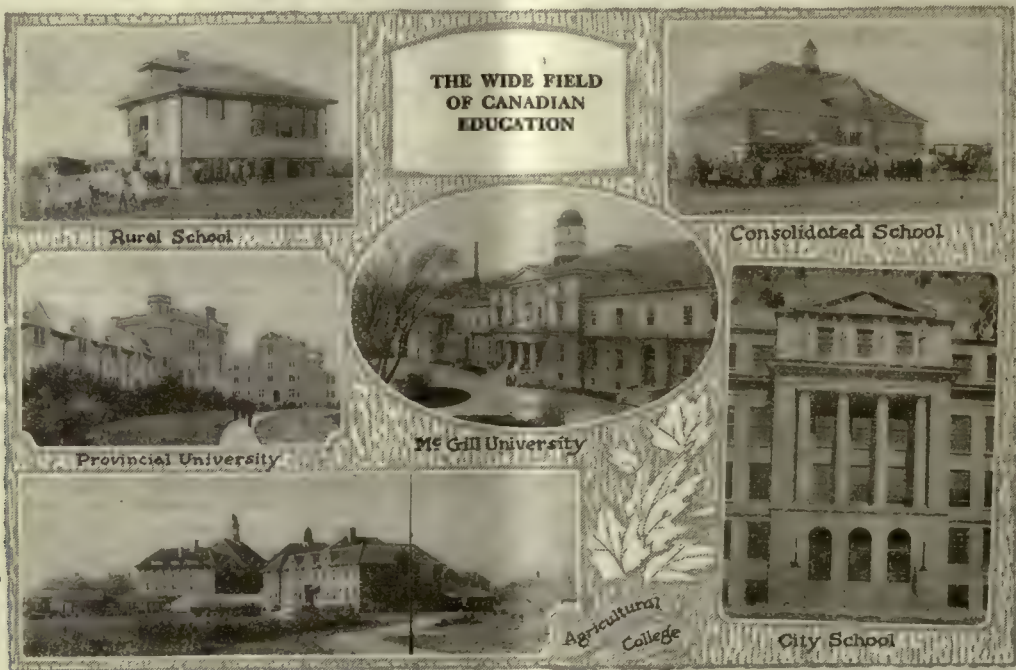
and elementary education is absolutely free. With the exception of Quebec, all the provinces have laws of compulsory school attendance, uniformity in the training of teachers, text books and the grading of children. Upon application the provincial government gives immediate financial assistance for the erection of new schools where settlement warrants it or increased attendance demands a larger edifice. Each year thousands of new schools are built throughout the length of the country, especially in the ever growing Western Provinces. Assistance in the payment of teachers is given by a system of grants. Nature study, manual instruction, school gardens, domestic science and technical education have been taken up energetically, whilst agriculture, which after all is the country's prime interest, forms an important item in the curriculum of all schools.

In the cities and towns of the Dominion, no expense is spared in the erection of handsome, spacious school buildings, where health conditions are the prime consideration, and they form no mean part in the aggregate of Canada's fine public structures. Solicitude is exerted in the health and the general welfare of the pupils in the plans of construction, and medical officers and health nurses supervise the general well-being when they are in operation.

Every province possesses finely equipped agricultural colleges with up-to-date faculties of scientific farming experts where the most progressive and modern methods of agriculture are taught and where the degree of Bachelor of Scientific Agriculture is conferred at graduation. As it is impossible for many of the sons and daughters of farmers to attend all the year round and complete the courses, winter sessions are held in every province where short courses are given imparting a thorough training to boys and girls over the public school age in intelligent farming and scientific methods, domestic science and other phases of farm work. These courses have proved of immense interest and value and are widely appreciated by agricultural communities, whilst the attendance is yearly increased as the benefits to be derived from these short terms are the more fully realized.

Educating the Foreign Born

A great problem in Canada has been the educating of the foreign born, and as it is a matter of difficulty and lassitude for those past their youth to break away from the language and customs they have used and followed from childhood, the work of Canadianizing is carried on through the children. By a compulsory use of the English language in school hours and the inculcation of Can-



In the Rural Districts

In the rural districts naturally, where in the first settlement farms are often widely separated, scholastic facilities do not exist in the same perfection, though everything is done by the education departments to meet the more difficult conditions, and the child of the farmer need not fall far behind his city brother in the progress of learning. The majority of the schools are ungraded, that is, several small classes are taught by the one teacher, and the districts are of such dimensions as to make the school-house easily accessible from the furthest limits. Fully trained teachers are provided from the provincial normal schools; attendance is compulsory as in the city; and the child from the farm receives a sound, practical education which suffices at completion to enter upon the more advanced courses of the high school, or to take up more intelligently and scientifically the first industry of agriculture. Not a small percentage of farm children go from the public to the high school and numbers become graduates of the agricultural colleges and universities.

adian ideas and ideals by zealous, painstaking teachers, the question of the assimilation of the foreign born has not presented great difficulties and the second generation generally prove staunch and loyal Canadians. The large voluntary enlistment in the Canadian army of foreign born and young men born of foreigners who emigrated to this country, bears eloquent testimony to this spirit.

There is virtually no limit to educational facilities in the Dominion, and the child having completed public and high school courses may go further and has twenty-six universities to choose from, ten in Ontario, four each in Quebec and Nova Scotia, two each in New Brunswick and Saskatchewan and one each in Alberta, British Columbia, Manitoba and Prince Edward Island. Through the Rhodes Scholarships, these young Canadians have the opportunity of entry into the colleges of Oxford and Cambridge, fostering the Imperial union and continuing their scholarship with students from every part of the globe. Some of the Canadian universities, notably McGill at Montreal and Toronto at Toronto, have won world-wide reputations and furnished European universities with professors.



Winter Sports in Canada

Canada can generally be sure of real Christmas weather to celebrate the holiday in the real Canadian way. Those who deprecate Canada's climate and its attendant ice and snow can have no conception of the fascination of a snowshoe tramp, the keen enjoyment of skating, the thrills of taking a hill on skis, or the breath-arresting shoot down a toboggan slide. For diversity of winter pleasures Canada stands unrivalled—a playground from coast to coast—a succession of Switzerlands.

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Ask the Canadian Pacific about Canada

Agricultural and Industrial Progress in Canada

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MONTREAL

January, 1922

The New Year

ONCE again the New Year is upon us with all its hopes and prospects, all its good resolutions and all its plans.

As a growing youth welcomes the New Year, resolving to do bigger and better things in the twelve months stretching so gloriously before him, so Canada faces the coming year with courage and determination, confident in her ability to continue along the pathway of development and expansion which year by year, in the years that have passed, has been her portion.

It could not be otherwise. Her record is her justification; her great natural resources her warrant; the spirit of her people her foundation.

If there exists in the minds of any, doubt as to Canada's power to extend her forward march of progress to complete economic reconstruction, it should be swept to the attic in the thought of her splendid war achievement—both at home and overseas—for what she has done under stress and trial of conflict she can most assuredly carry out in the tranquil times of peace.

The one pessimistic thought in an otherwise optimistic outlook is the present unemployment situation. That the New Year may bring such a revival of business and industry that this

lamentable condition shall soon cease to exist, is the earnest wish of every Canadian. Grant that it may be so.

The Dominion Government figures for this year's wheat crop of 329,855,300 bushels, indicate progress in both cultivation and production. Louis Hebert, Canada's pioneer farmer, little dreamed when he turned the first sod on his tiny farm on the heights of Quebec in the early days of Champlain, that he was beginning a work which would develop into a huge national asset. He thought only of providing food for the immediate needs of his family, but in so doing gave impetus and encouragement to what has become Canada's first industry.

Canada is one of the few remaining countries that offer agricultural lands on terms within the means of settlers of limited capital, located in a land of democratic self-govern-

ment and with a climate acceptable and desirable to the white race.

With a recurrence of the influx of desirable immigration and consequent development of this vast area of productive farm lands, a corresponding extension in trade and commerce and all that goes to the building of a great nation must accrue.

Canada welcomes the New Year with confidence and with optimism.

President E. W. Beatty in addressing a New Year's Greeting to the officers and employees of the Canadian Pacific Railway, in which he exhorted a continuation of the same good-will, co-operation, enthusiasm and loyalty that has marked the career and inspired the success of the Company during the forty years of its existence, said:

"Above and beyond all else, our chief aim should be to promote the best interests of the Canadian people and by our united efforts and efficient service, accelerate the development and progress of our great Dominion."

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It will be appreciated by the Department if editors and writers using matter from this Bulletin will quote source.

Norman S. Rankin, *Editor of Publications.*
E. L. Chicanot, *Asst. Editor.*

The Agricultural Situation

By J. Dougall, *General Agricultural Agent,*
C.P.R., Montreal

After ten years' uninterrupted success in carrying off the world's wheat championship, as symbolized in the sweepstakes at the International Exposition at Chicago, this honor has finally been wrested from Canada by a Montana farmer, and the Dominion is left with the double consolation of knowing that she was runner-up in the contest and that the wheat grown by the United States winner, judged to be the best in the world for the year, was grown from seed purchased in Canada from Seager Wheeler, the "Wheat Wizard," himself so many times the champion grower.

In this international contest, stated to be greater than ever, Canada surpassed herself this year, securing a greater aggregate of prizes than ever before. Fitting tribute was paid to Canada's place in world agriculture by the decision to hold the next international exhibition in Canada and in electing a Canadian as president of the association. The 1922 exhibition will be held in Toronto under the presidency of John G. Kent, managing-director of the Canadian National Exhibition. This will be the first time the exhibition has been held in Canada, whilst a Canadian has not sat on the executive since 1885.

An Envious Year's Record

Though a certain amount of regret is felt at relinquishing the wheat championship after having held it against all comers for so many years, Western Canada has every reason to be decidedly proud of its achievements, creating a more enviable record for itself than ever before. Out of twenty-five prizes awarded for hard spring wheat, Western Canada secured twenty-two, including the second. In the oats class in which there were twenty-five awards, Western Canada carried off twenty-one, and Northern Ontario one. J. C. Lucas, of Cayley, Alberta, repeating his success in capturing the championship.

For the first time Canada won the first prize for Alfalfa seed, securing in all three places out of ten in this competition. The winners hailed from the irrigated Brooks district of Alberta, and these achievements constitute a striking tribute to the high value of the Canadian Pacific Railway Irrigation Block on which

the crops were grown. "Wee Donald," owned by A. C. Weaver, of Lloydminster, Saskatchewan, was again adjudged the Grand Champion Clydesdale stallion.

Following are the principal awards secured by Canadian exhibitors.

Wheat.—Canada secured twenty-two out of twenty-five places for hard spring wheat. Alberta secured second, fourth, fifth, sixth, seventh and eighth places and Saskatchewan ninth and tenth. Alberta also secured fourth place in white spring wheat.

Oats.—Western Canada secured twenty-one out of twenty-five places. Alberta took the first, second, third, fourth, fifth, sixth, ninth, eleventh, fourteenth and seventeenth places; Saskatchewan seventh, eighth, twelfth, sixteenth, eighteenth and twenty-third; Manitoba the nineteenth and twentieth; and Ontario the twenty-fifth.

Barley.—Western Canada secured four out of ten places. Fifth and ninth places went to Manitoba and seventh to Alberta.

Alfalfa.—Canada for the first time won the first prize for Alfalfa seed. First, third and ninth places went to Alberta out of a total of ten awards.

Horses.—Percherons. In the class for stallions four years and under five, Saskatchewan secured the reserve championship, first prize, and the Canadian bred championship. In the class of stallions three years and under four, Saskatchewan won eighth place. In mares two and under three, Alberta seventh, and three and under four, Saskatchewan second.

Clydesdales. For stallions the grand championship went to Saskatchewan and reserve grand championship to Manitoba. In aged stallions' class, Saskatchewan first, Manitoba second, Ontario third, fourth and fifth and Manitoba seventh. Stallions three years and under, Manitoba second. Two years and under three, Manitoba second, Saskatchewan fourth. One year and under two, fourth to Saskatchewan, fifth to Alberta, seventh Alberta and eighth Saskatchewan. In aged mares the second place went to Alberta and third to Saskatchewan. In mares three and under four, third went to Saskatchewan and fourth to Manitoba. Mares two years and under three, second to Manitoba, third to Saskatchewan, and fifth to Ontario. Mares one year and under two, Saskatchewan first and Manitoba fifth.

Cattle.—Shorthorns. Alberta fourth prize in two year old heifers.

Sheep.—Saskatchewan secured a number of third, fourth and fifth placings in Oxfords, and in the same class, Ontario a number of seconds and thirds. In Southdowns, Ontario won three firsts and a large number of lower placings.

Hogs.—Saskatchewan secured fifth for Tamworths under one year and third in Yorkshires.

The Fertile Northland

Agriculturalists were once firmly convinced that wheat would never be successfully raised north of the international boundary between Canada and the United States, and the Dominion has dissipated this belief by consistently carrying off the international honors for this crop for the past ten years. There would seem to be no northern limits to the wheat belt, and as far back as 1876, the prize winning wheat

at the Centennial Exposition at Philadelphia came from Fort Chipewyan, approximately 650 miles north of the international boundary, and at that time a region barely penetrated by explorers, having been raised there by Roderick MacKenzie, a brother of the great explorer of the same name. This success was followed up in 1893, when some of the prize wheat at the Chicago World's Fair was grown at the Shaftesbury Settlement, fifteen miles from Peace River Crossing, or approximately 500 miles north of the United States boundary.

These successes presaged the great productivity which the future held for that fertile region to the north of Alberta, undefined, and known generally as the Peace River Country, stretching northward from a line drawn west from Edmonton upward to the Arctic Circle. This territory is just coming into its own and is clearly destined to evolve into one of the richest agriculturally producing regions of the Canadian West. It has suffered from certain handicaps, and has had, to a great extent, to await for its development the great farming areas to the south of it. Now, however, the way seems clear to unrestricted development with an active transportation system giving it communication with the provincial capital. This region has experienced a most successful agricultural year, and has witnessed the introduction of numbers of new settlers of fine type with substantial capital. whilst the individual prosperity of the farmers is indicated in the volume of raw material, lumber, etc., moving into that country along the railroad.

A \$15,000,000 Cereal Crop

It has been estimated that in the Peace River, Grande Prairie and districts along the lines of the Edmonton, Dunvegan and British Columbia Railway, the acreage sown to wheat was about 65,000 acres, to oats nearly 100,000 acres, and to barley about 25,000 acres. The value of the total crop is expected to run in value from ten to fifteen million dollars. The grain production this year was a substantial one, and in addition to the fine grain crops of cereals, others have achieved excellent growth. Tomatoes and cucumbers have grown to profusion, cabbages four and a half feet wide are said to be not uncommon, and potatoes twenty inches long have been harvested.

The Grande Prairie and Peace River districts appear at a glance at the map to be so far north and in such propinquity to the Arctic Circle, that the popular belief will persist that crops which are produced further south are impossible of production there. A few duly authenticated instances of crop production, gleaned from many, may best aid to eradicate this misconception.

Henry Robertson, a Grande Prairie pioneer, threshed this season nearly eighteen thousand bushels of wheat, making his twelfth consecutive

bumper crop. His wheat yield per acre, during this period of farming, has never dropped below twenty-five bushels and has run as high as fifty.

Some Excellent Results

A threshing machine operating in the region of Lake Saskatoon, Grande Prairie district, this year, maintained an average of thirty-five bushels of wheat per acre for seven days operations in the district. One field of Marquis wheat threshed sixty-seven bushels to the acre; a field of oats went one hundred and seven bushels to the acre; and a field of barley seventy-one bushels.

The Government Experimental Farm at Beaverlodge, which serves the Grande Prairie district, secured a yield of seventy-five bushels to the acre from Liberty Ottawa 480 hullless oats, the equivalent in meat content to one hundred and seven bushels of ordinary oats. Winter wheat on the same farm returned thirty-eight bushels to the acre, and the spring variety as high as sixty bushels per acre. Excellent yields of clover seed were also secured.

These are merely a few instances of agricultural production in a territory five hundred miles and more north of the international boundary, and this is as yet a pioneer country attracting colonists to its available lands open for settlement. It is not difficult in the face of the facts to prophesy, for the vast territory, a future of unparalleled prosperity and vision in this Last West, one of the wealthiest areas of the Dominion.

Pocket Gardens

The *New York Independent* recently published an account of what is called a "Pocket Garden" taken to the Arctic seas. "When the MacMillan expedition packed up its goods and chattels a short time ago and departed for Baffin Land and the Frozen North on a voyage of scientific exploration, it carried along the first fresh fruits and vegetables ever to penetrate to that barren country," says *The Independent*. "Fresh spinach and green corn, new rhubarb in the stalk for rhubarb pies, and raw cabbage for salad were included. Can you imagine the scene? A mid-summer dinner in the midst of icelocked fields and a group of fur-wrapped Esquimaux to wonder and comment on the strange delicacies of the white man's table! Fresh food, months after it has been pulled from the garden and eaten still fresh in a land where no vegetation of any sort is found! How is it accomplished? Every bit of it has been wrapped up simply in paper bags and stowed away with no greater precautions than the blankets or other luggage. Yet sufficient food has been carried along in this form to last each member of the party five months."

According to *The Independent*, this "Pocket Garden" was made possible by a new process of dehydration, which gets rid of the water in fruits and vegetables without destroying the original flavor, so that by placing them in water for a few hours, they are restored to a condition of freshness. This process is designed not for dehydration on a large scale in factories, but for use on farms and in homes, so that the housewife, whether on the farm or in the town, can quickly and economically preserve fruits and vegetables for winter use.

Dehydrated fruit or evaporated fruit as it used to be called, has not been received very favorably by the public in the past, because processes were imperfect and the resulting products unsatisfactory. Recent discoveries by experts and the latest resulting apparatus have now removed all objections, and demonstrations have been given at which those in attendance were unable to distinguish between dishes prepared from the fresh and from the dehydrated and restored materials.

Would Reduce Cost of Living

If a domestic dehydrator capable of dispelling the water from fruits and vegetables without destroying the flavor could be manufactured in Canada and sold at a price to bring it within the reach of every housekeeper, it would considerably reduce the cost of living, both by eliminating waste and by reducing the cost of preserving fruits and vegetables in the household. It would save the cost of glass jars and other necessities of old-fashioned canning. Dehydrated fruits can be safely kept in cardboard boxes such as are used for cereal foods or even in ordinary paper bags. However, any housekeeper who has glass jars and wishes to use them for the purpose of storing dehydrated food can put a much greater quantity of food in a jar than was possible when preserving food by old-fashioned canning methods.

According to a table prepared by Prof. Caldwell, Horticultural Investigation Branch, Department of Agriculture, Washington, D.C., hundred-pound lots of fresh fruits and vegetables reduce as follows upon dehydration, the differences in weights being due to the varying quantities of water in different kinds of fruits and vegetables:—

PRODUCT	POUNDS
Apples (autumn and winter varieties) to	12 to 15
Apples (summer variety) to	10 to 12
Apricots to	16 to 18
Blackberries to	16 to 20
Beans to	11 to 13
Beets to	14 to 17
Cabbage to	8 to 9
Carrots to	10 to 12
Cauliflower to	12 to 14
Celery to	8 to 9
Cherries (pie) to	17 to 21
Cherries (sweet) to	22 to 26
Corn (sweet) to	26 to 33

Figs to	18 to 23
Loganberries to	17 to 22
Okra to	10 to 11
Onions to	9 to 11
Parsnips to	20 to 22
Peaches to	13 to 16
Pears to	18 to 22
Peas (garden) to	22 to 25
Potatoes (white) to	23 to 25
Potatoes (sweet) to	30 to 35
Prunes to	30 to 33
Pumpkin to	6 to 8
Raspberries to	17 to 23
Spinach to	8 to 10
Squash to	7 to 9
Tomatoes to	6 1/2 to 9
Turnips to	7 to 8

This is the age of apartment house life with all its inconvenience of restricted space, and a strong argument in favor of dehydration, as compared with the present domesticated practice of preserving in sealers, is the small space in which a large supply of dehydrated fruits and vegetables can be stored. Further, if, from any reason, more material is restored for use than is required for consumption, it can be again dehydrated without any depreciation in quality.

There has never in the past been a system of home drying that would compare favorably in convenience with what is known as "canning" in glass jars, but it is claimed that this difficulty has now been solved, and that food can be dried in the home more conveniently and economically than it can be "canned."

Women prefer their home preserved fruit to factory canned products, not only because they take pride in their own work, but also because they know exactly the condition of the fruits and vegetables at the time they were preserved, and although most of the canning factories exercise great care in the selection of fruits and vegetables, women will always have more confidence in their own selection and examination. A similar preference would no doubt be given to home dehydrated food as compared with the factory product if it could be conveniently dried at home in such a way as to preserve the original flavor, and packed in attractive pasteboard containers properly labelled.

There exists at the present time a good deal of prejudice against dehydrated foods owing to the fact that in past methods of dehydration with hot air, or by long exposure to the sun and air, the outer cells of fruits, vegetables, meats and fish were destroyed and many of the essential oils and flavors escaped before the water was expelled from the inner cells. However, it is claimed that by a process which slightly moistens the dry air with steam, wonderful results have been achieved in the preservation of fruits, vegetables, meats and fish.

Record Yield For Prairies

No greater or surer indication of the progress of the Canadian West could be found than

its consistent annual increase in the amount of land brought under cultivation and the increase in grain production which is a natural consequence. Whilst other countries are battling with the problem of a declining rural population and the flooding of the urban centres, Canada's stretches of fertile agricultural land are slowly being brought under the plough and the country's farming population added to each year by the tide of immigration. Canada, through her splendid wheat crop this year, has risen to second place among the wheat producing countries of the globe, and this is wholly attributable to the increase of settlement and cultivation in the Western Provinces, the development of which is fast extending northward.

The figures for the grain yields of the Prairie Provinces for the season 1921 have been made public, and the expectation of the increase the country looks for annually has been again realized. Substantial increments in the year's production of all cereals maintains for the Canadian West the title of "Granary of the Empire," and indeed, as the provider of wider portions of the globe, warrants aspirations to a yet more ambitious title.

The wheat yield for the provinces of Manitoba, Saskatchewan and Alberta for the year 1921 is returned by the Government at 308,925,000 bushels as against 234,138,300 in 1920, or an increase of nearly 32 per cent. In 1919 the yield was 165,544,300 and in 1918, 164,436,100, each year showing a consistent and substantial increase.

Marked Increases, Oats, Barley, Rye

The oat yield of the three provinces is recorded as 363,185,000 bushels as against 314,297,000 last year, an increase of more than 15 per cent. The yield in 1919 was 235,580,000 and in 1918, 222,049,500, the same consistency of increase being exhibited.

The barley yield west of Lake Superior to the Rocky Mountains was this year 46,619,000 bushels as compared with 40,760,500 last year, or an increase of more than 14 per cent. The harvest of 1919 returned 36,682,000 bushels of barley and that of 1918, which was an exceptional year for this crop, 47,607,400.

The increase in rye production in the West this year is remarkable. The total yield of the three Prairie Provinces is 23,113,000, which, when compared with the 1920 yield of 8,273,600, records an increase of more than 179 per cent. There were consistent increases in this crop before 1920, the 1919 harvest returning 7,263,000 bushels and the 1918, 6,181,700, and the enormous increase recorded in the past season is due to an increased acreage following an extensive and aggressive propaganda.

Despite the greater volume of the 1921 crop, the increase on the cereals noted alone amounting to nearly 150 million bushels more than that

of 1920, and in face of the fact that the United States market, in which the greater proportion had previously found outlet, was virtually closed, shipment was early got under way and the greater part of the export crop had left the country before the close of navigation on the St. Lawrence.

By the middle of November, 120,000,000 bushels of export wheat had left the Prairie Provinces and 132,000,000 bushels of grain had reached Montreal. This is a new record in grain handling, being nearly twice the volume of the the best previous year.

A Manless Farm

Western Canada is expansive and man-sized. Things are conceived and carried out there in a manner consistent with the gigantic scale on which Nature constructed and framed the country. It is generally conceded that a Western Canadian farm is a man's job, the close grips with Nature a purely male issue, the various phases of operation, the many and quick decisions to be made such as only a man's mind can compass and cope with. But occasionally one comes across instances of members of the gentler sex big enough in spirit, sturdy enough in physique, visionary enough in prospect, imbued with a sufficiently deep love of Nature and her moods and vagaries to enter unmated upon the pursuit of Western Canadian agriculture, and in the very fascination the occupation holds for them carry it out successfully. They are not the masculine, robust Amazons one might reasonably be led to expect but generally demure, modest, Ruths, concealing beneath a timid exterior a wondrous spirit and stalwart physique.

A maleless Eden on the Canadian prairie is to be found at Oak Lake in the Brandon district of Manitoba, where two modern daughters of Eve have, unaided, wrought miracles of accomplishment in transforming the bald uncultivated sod into one of the fairest and richest farms in the area.

Here, where man is never seen, save as a visitor, two fair, young English girls are successfully managing and operating a vast acreage which would tax the capacity of most male agriculturalists. Their success over a number of years, their high degree of prosperity after arduous toil which was all uphill, the manner in which they have conquered, one by one, the handicaps of their sex and circumstance, form the most brilliant tribute to Canadian womanhood.

The fortune they have wrested from the bosom of the Western plains proves conclusively that it is far from impossible for women to achieve the completest success in Western Canadian agriculture, and their story and example may encourage others eager to try the freedom and independence of life in the open, but who are held back by what they consider the handicaps of their sex.

Women of Courage and Enterprise

Their father came from the British Isles to Manitoba some years ago with his wife and daughters and settled upon a homestead in the Oak Lake district. He was city bred, and his daughters as unfamiliar with rural or farm life as any children whose early years have been spent among city streets and whose activities have been limited by urban boundaries. Misfortune overtook them rapidly for the breadwinner of the family died leaving his wife and daughters unprovided for, their only asset a farm heavily encumbered with mortgages.

The natural thing one would have expected to happen would be the abandonment of the farm and the flocking of the family to the nearest town or city to add three unemployed souls to its population. The two girls, however, were made of stern stuff and possessed of intelligence and vision which gave them foresight of the great agricul-

tural future which awaited Manitoba and the Brandon district. Individually they threshed the matter out thoroughly, and came to the same conclusion. They decided to set themselves a tremendous task for two young girls, one of seeming impossibility, one to daunt most men and fraught with the longest odds against success—no less than that of clearing the farm of its debts and encumbrances, putting it on a sound basis, and inducing it to provide them with a comfortable living and ultimate prosperity and independence.

They would seem to have started out in the greatest independence of spirit, a keen appreciation of their capabilities in this direction, and a resolute determination never to call in the assistance of any man but prove what two inexperienced girls could do with fertile western land.

Since the father died a man's hand on the farm has never guided a plough or seized a fork. Ploughing, seeding, haying, stooking, harvesting, feeding, all the multitudinous tasks of farm life in their every phase and detail, have been solely accomplished by the two girls, and the excellent reputation the farm has among the province's agriculturalists to-day is the greatest tribute to their sustained endeavor and determination. Whilst the mother, who is now old and almost blind, remains the housekeeper, the girls have, in the best and every sense of the word, proved themselves the men of the family and overcome any handicaps their sex may be expected to have imposed upon them.

From 160 to 1,120 Acres

When the father died the farm consisted of a homestead of one hundred and sixty acres encumbered with a mortgage; to-day the two girls have developed and extended their holdings until they comprise a section and three quarters or 1,120 acres. They started operations on their own with seven horses and ten head of cattle; there are now on the farm twenty-three horses and ninety head of cattle. Furthermore, each animal is an attainment in breeding worthy of special attention, and no expense or care is omitted in bringing the farm's stock up to the highest pitch of perfection. A bull was recently purchased at Brandon fair for \$700, and last year some of the horses from the farm secured first prize and sweepstakes at the Oak Lake Agricultural Fair, which is a much coveted honor in a territory where a high excellence in husbandry is maintained. Other stock and poultry—pigs, chickens and turkeys—are of the same fine standard and perfection is the consistent aim in all farm production.

The farm buildings would be a credit to a larger staffed establishment and practically every piece of work in connection with their erection and maintenance is performed unaided by the two girls, even to excursions to the woods for timber, and the actual cutting and hauling. The whole collection of farm buildings and sheds presents an unusually cleanly and tidy appearance, everything being in its place and all machinery covered and protected. The general excellency of the management of the farm has indeed created such a reputation that it is visited frequently by farmers from near and far who freely admit that they learn much there and are not too proud to take a pattern of operation from the achievements of two young girls.

Two Charming English Girls

The girls are by no means Amazons or with pronouncedly masculine traits of character and appearance as one might reasonably conclude. Their man-like occupations, their ceaseless work in the open in all weathers, has never taken from them that girlish charm which is woman's most cherished possession. They are still two charming English girls, slight of figure, fair of countenance, with all the allurements of their sex despite the fact that they faced the necessity of becoming the men of the farm, and have outdistanced man in a man's occupation.

Quiet, modest, and of the cheeriest of dispositions, they have always held the affections of the people of the district who watched with admiration their gallant struggle to success and independence, and are immensely proud of

their dwelling in their midst. Devoutly religious, though living nine miles from town where exists the nearest church of their denomination, they have on no occasion missed their regular weekly attendance and it is recorded that they have never once been late. During the war when a jumble sale was held among the farmers for the relief of distressed French farmers, the girls gave one of their splendid two-year old colts which brought \$175 and turned out to be one of the most valuable gifts of the sale. They appreciated, perhaps more than most, the acute position of a farmer struggling under severe handicaps.

Their Work Equitably Arranged

The work of the two partners is equitably arranged. The elder sister handles all the business affairs and in the matter of buying and selling has proven herself the equal of all and the superior of many of the business men of the district. The younger supervises the actual farm operations and the duties of the two dovetail in harmoniously without conflict of any nature. They love their shares of the work, their life runs on equitably, smoothly and contented, whilst they share in that exquisite knowledge which comes of success attained by honest effort and ceaseless endeavor.

The passerby on the trail may see either or both of the sisters working in the adjoining fields at any time, seated on plough or binder, pitching hay or loading sheaves. He may also be fortunate enough to enjoy a greater intimacy in the privacy of their farm home, and learn to his entire satisfaction that the labors of the field need not detract from woman's great charm in the atmosphere of the fire-side, and that girls may become homemakers in the material as well as the sentimental significance of the term.

Manufacturing Asbestos Products

Canada offers advantageous industrial openings in many important lines of manufacturing, and probably none more so than in the manufacture of asbestos products. It has long been an anomaly that the Dominion, whilst ranking as the world's principal producer of asbestos, has lagged behind in the matter of engaging upon the manufacture of asbestos products. Practically the entire demands in Canada for goods manufactured from asbestos have been satisfied from the United States manufacturing plants. Canada, with 88 per cent. of the world's possession of asbestos deposits, is exporting 89 per cent. of the raw material she mines to the United States and buying back her own product in a manufactured form.

Though the urgency of bettering this state of things has long been recognized, efforts to this end have never been aggressive or strong, largely because the necessity in establishing asbestos manufacturing industries on a sufficiently large scale lay in capital which was lacking. Nevertheless, a few manufacturers who have successfully entered upon the manufacture of asbestos goods, have been successful to an extent in increasing Canada's exports of manufactured asbestos even though little has been done in materially cutting down the volume of imports in these goods.

Canada's Production

Canada's production of asbestos and asbestic in 1920 amounted to 197,321 tons, the deposit of crude and milled fibre being 157,904 tons.

About seven per cent. of this was shipped direct to England and three per cent. went to Italy, Japan, France, and other countries. Only about one per cent. was retained in Canada for manufacture. The remainder, as has been noted, went in its raw state to the United States. It is significant that a proportion of the shipment to the United States went to the South American trade, by which transaction Canada must obviously have been a direct loser. In 1914 the amount of manufactured asbestos products imported into Canada was valued at \$467,160, and this had, by 1920, increased to \$812,042. In the same period manufactured asbestos goods exported from Canada grew from \$98,274 to \$232,316, which indicates an expansion of some magnitude in the industry. The value of asbestos produced in 1920 was over \$14,000,000; it has been estimated that if this worth of raw materials had been fabricated in Canada, its value to the country would have approximated \$104,000,000.

In Canada there is an awakening to the fact that considerable revenue and industrial development and employment is being lost to the Dominion through this heavy export of raw asbestos, and the failure to take advantage of manufacturing at home both for domestic consumption and the export trade; there has been, however, some endeavor to extend the Canadian industry of the manufacture of asbestos products.

Additional Manufacturing Plants

Previously there was only a single plant, at Lachine, Quebec, where asbestos slating, shingles, sheeting, mill board, paper, corrugated asbestos sheets, and air-cell pipe coverings were made. The production of the plant was for both local and export trade, consisting in the main of asbestos boards. A new development, however, is the construction of a large manufacturing plant at Asbestos, Quebec, where for the first time in Canada asbestos products on a large scale will be produced. The products will include asbestos textiles, brake lining, asbestos shingles, paper, roofing, pipe coverings, etc. Another industry manufacturing asbestos products has been located at East Broughton. This, it is hoped, will mean the beginning on a larger scale to the industry of asbestos manufacturing in Canada. In 1920 Canada exported to the United Kingdom, United States, Australia, France, Italy, Japan, Spain and other countries, 152,740 tons of crude asbestos worth \$11,521,536.

In the Province of Quebec, where the principal asbestos deposits are located, excellent opportunities to build up a home industry in the manufacture of asbestos products exist. Not only asbestos but also the other important, refractory, non-conductive material, magnesite, is found in the same vicinity. These deposits lie in close proximity to each other and to the most densely populated areas of the province, from

which abundant and cheap labor can be secured as well as an assurance of expanding home markets. The other essential manufacturing condition, power, is abundantly provided from the vast resources of water power, developed and undeveloped, which ensure cheap hydro-electric power to all industries.

Until Canada can effect this and see her own plants rise to the exclusion of her present volume of imports, she will continue to lose a considerable revenue in two directions, whilst a continuation of the support of the industries of other countries means the stifled growth of her own. With a virtual world monopoly of the supply of asbestos she should, in all justice, have the same exclusive possession in manufacture from them, and this time and capital will bring about.

Canada's Preferential Tariffs

One of the principal inducements Canada holds out to United States and other foreign manufacturers to settle in Canada or establish branch factories in the Dominion, is the extent of preferential tariffs she enjoys with countries within the British Empire and with other countries as constituting one of the nations of that Empire, which advantages are open to the manufacturer, resident in Canada, whilst trading from the Dominion with those countries. Special developments in this line have marked Canadian commercial relations in the past two years and the whole question is the subject of an article by the Chief of Foreign Tariffs Division of the Government, Commercial Intelligence Branch.

United Kingdom

Great Britain had already been giving a tariff preference on nearly all her dutiable imports, but in November, 1921, under the Safeguarding of Industries Act, further duties were imposed on certain foreign goods whilst exempting Empire products. The new duties affect principally chemicals, optical instruments, scientific glassware, laboratory porcelain, balances and measuring instruments of precision, ignition magnetos, arc lamp carbons, wireless valves, and similar rectifiers.

In the regular tariffs of the United Kingdom the goods subject to ad valorem duty are clocks, watches, motor cars, musical instruments, and accessory parts of any of these articles, except rubber tires, which are free of duty. On these goods and on certain wines and cinematograph films, a preferential tariff, one-third lower than the rates leviable on goods of foreign origin, is in effect. The general ad valorem tariff, applicable to foreign countries, is 33 1/3 per cent., so that the rate to Canada and other parts of the Empire is 22 2/9 per cent.

British West Indies

The West Indian colonies, which ratified the Canada-West Indies trade agreement in 1920, have one by one adopted new customs ordinances granting tariff preferences to imports from Canada and other parts of the Empire. Thirteen of these colonies have now the new preferential tariffs in operation. The reductions specified for the several colonies were to be not less than the following:—Bahama Islands, 10 p.c.; Barbados, 50 p.c.; Bermuda, 25 p.c. British Guiana, 50 p.c.; British Honduras, 33 1/3 p.c.; Jamaica, 25 p.c.; Leeward Islands, 33 1/3 p.c.; Trinidad, 50 p.c.; Windward Islands, 33 1/3 p.c. All the colonies have approved the pact and have the preference in operation with the exception of Honduras.

New Zealand

New Zealand accords Canada and other parts of the Empire a preference on most of its dutiable goods. The preference is variable, the most common rates being 30 p.c. under general tariff and 20 p.c. under the preferential tariff. Printing paper is free when imported from Canada but 20 p.c. when of foreign origin. Motor vehicles are 20 p.c. and 10 p.c. preferential tariff. The New Zealand tariff is applicable to the Cook Islands.

Australia

At the time of writing the Australian parliament has before it a measure containing special provisions for negotiating preferential tariffs with other British Dominions. It is expected that this legislation will be enacted at an early date.

Samoa

In April, 1920, the New Zealand government issued a customs order providing for a new preferential tariff in Samoa, a mandated territory. The general tariff on nearly all goods is 22½ p.c. There is a British preferential tariff of 15 p.c. which is applicable to imports from Canada. Tobaccos only are excluded from the preference and there is a short list of articles exempt from duty.

South Africa

A rebate of three per cent. ad valorem on British goods is allowed, which, as the full rate to foreign countries in many cases is only 3 p.c., permits the introduction of goods from Canada duty free. On nineteen items the rate on foreign goods is 25 p.c. with a corresponding rate of 22 p.c. under the preferential tariff.

Rhodesia

Northern and Southern Rhodesia are included in the South African Customs Union and have a tariff similar in many respects to that of South Africa. In a part of Northern Rhodesia and the whole of Southern Rhodesia, however, imports from Canada come under a British preferential tariff which, in some respects, is more favorable than the tariff of South Africa. The preferential rebate, for example, on the item covering unenumerated goods is 11 p.c. ad valorem.

Cyprus

Cyprus has a preferential rate for certain Empire products which is one-third lower than the full rate. This list includes musical instruments, clocks, watches, cinematograph films, cotton yarns and manufactures, soaps, matches, woolen yarns and manufactures, furniture, haberdashery and millinery. The preferential tariff for unenumerated goods is one-sixth lower than the full rate which is 10 p.c. ad valorem.

Outlook in Western Canada

By John Sweeting, Industrial Agent, Canadian Pacific Railway, Winnipeg.

A year of hope—1921—and its momentous problems and many disappointments has passed away and again we look onward in anticipation of better things. This much can be said for the past year that it has brought us nearer to a settlement of outstanding conditions. There appear to be many corners yet to be turned before we can settle down to steady progress in development work, but we are appreciably nearer the end, anticipating that each corner, as we reach it, may be the last.

The year gone by will show better results than, just entering the New Year, we can clearly see, and it will eventually be added to the long list of twelve months that have spelt progress in the West, adding to its wealth and increasing its power of production, while great strides have been taken in marketing organization and expansion. There has been a very decided effort made to investigate the countries with which we can enter into competition with the rest of the world, and the trader was strengthened in the confidence which has been brought about by the knowledge that Canadian-made articles and natural products find a ready market in many overseas continents.

Our export trade must be fostered and pushed forward every month of the year and by every possible means. The outlook for development is immense, and limited to a great extent only by the capital that is prepared to turn its attention to what appears to be a veritable mine of wealth for the Canadian merchant. To cater for overseas business is a factor in Canadian trade that requires the closest study and should be a first principle with those in a position to do so. This is possibly the means by which, in the long run, Canada as a trading nation will build her own specific nationality, and spread over her vast continent the great industry of which her natural resources give premonition. In the past few years exports in new lines of products have very considerably increased, and there is reasonable grounds for supposing that trade already secured can be kept and added to year by year.

General Prospects for New Year

What the general prospects for the New Year are is somewhat difficult to gauge at this early period, but a definite forward movement in volume and value seems probable. In the West inaction is not looked on with approval, and only dire necessity for retrenchment keeps active expansion within bounds. Many projects have been held up pending what are considered more reasonable prices, and there is justification for saying that during this year there will be a decided revival in many lines, more especially in construction work. Tentative proposals would justify adopting a confident tone in this relation. This is hardly likely as Canada is, to a great extent, on a more stable foundation than twelve months ago, and, moreover, necessity has become insistent for the provision of accommodation to carry on business.

Projects for further power development in Manitoba, Alberta and British Columbia are well under way, with large extension of power lines in Manitoba and telephone systems in all Prairie Provinces. Good roads are calling for much expenditure, and by-laws are being considered this month, covering extensive expenditure. Warehouse accommodation is at a premium and must be amplified while new business

concerns are negotiating for entering the Western field and must be provided with the necessary buildings. A continuation of the housing schemes is obligatory as the situation is still precarious and many hundreds of houses have yet to be built.

On the Coast the new dry-dock will be under construction and the prospects are for additional pulp-mills, while British capital has become interested in Western power development and possibly steel works. Mining would appear to have somewhat better outlook, and the lumber market appears to be ready to take care of considerable expansion. Manufacturing, wholesale and retail trades, for the first two or three months, are not likely to show an upward tendency, but early spring will bring a decided gain in trading, with low stocks to be replenished.

The outlook at the time of writing would appear to justify an optimistic vision of conditions from the month of March onwards.

Profitable Fur Season

The Canadian trapping season is well under way with possibly the best prospects that have attended the chase for some years with the exception of the extraordinary season of 1919-20.

A winter army of larger proportions than usual has left for the snowy vasts of the north to take its toll of the fur-bearing denizens of this region, and this in itself is augury of a profitable season anticipated. Last year Canada's wild fur catch was worth to the trappers about twenty million dollars, and a substantially greater amount is looked for this year.

It is the most difficult thing in the fur trade to presage the conditions of a season ahead, as very trivial factors are often responsible for momentous changes in a very brief space of time. Expectation of a large catch this season is, however, based on considerable evidence. The greater number of licenses issued with the increased number of trappers indulging the pursuit would indicate this. Again, last year trapping was light, and in consequence the available live animals this season is substantially augmented. Muskrats, depleted during the years of high prices, are reported as being vastly increased in numbers, whilst fox is also expected to furnish profitable trapping.

Prices to be Higher

In prices, the tendency in both the United States and Canada is to be higher for the new catch than experienced for some time. Whilst furs have dropped from the phenomenal prices which prevailed two seasons ago, raw pelts are selling at several times the amounts they brought prior to the war. Fur houses are in need of pelts and in many cases the shelves of dealers are practically denuded. There has been a resultant flurry recently on the part of certain

manufacturers and dealers to obtain small supplies for immediate requirements which is a clear indication of availability.

It is expected and confidently hoped by fur dealers that as the quantities of new merchandise come on the market, the range of prices will be kept well in check and any possibility of forcing the market up obviated. From the trapper's point of view, however, there is little doubt but that a substantial catch with consistently good prices will make the season a very profitable one for him. The fur catch now means a considerably enhanced revenue to the Dominion since the establishment of fur markets at Canadian centres which now control the sale of the greater part of the Canadian catch. Yet wider attraction is anticipated for it in the spring and the influencing of greater supplies of the raw product from other countries.

Across Canada—London

Among the lesser Canadian cities which have, in the past, shown a particularly aggressive industrial growth and development, London, Ontario, stands out prominently. A fair city, in a picturesque locality, with charming surroundings and an equable climate, surrounded by a rich agricultural district which annually has a substantial revenue, it is like its prototype and namesake, situated on a river Thames. For manufacture and engagement in the export trade, it is ideally situated, and its advantages in this connection have attracted many foreign business firms in the past and are still drawing considerable attention from prospective industrial settlers.

Four railroads serve the city, giving it instant touch with all parts of the Dominion and the centres of the United States, whilst, joined with Port Stanley by a short electric line, it has communication by steamer with Cleveland, Detroit and Buffalo. It is the eighth industrial centre of Canada and the fourth bank centre of Ontario. Bank clearings in 1920 were \$192,157,969 or nearly \$30,000,000 in excess of the previous year.

Apart from its business importance, it is the heart of educational endeavor for a large area and the seat of Western University with its faculties of arts, medicine and divinity. It has numerous other schools of a high order and churches of fine architecture; its spacious streets and handsome public buildings are sources of civic pride; its residential districts are well laid out, commodious, and free from any congestion.

The city's healthy growth may be gleaned from the fact that the population increased from 37,976 in 1901 to 59,100 in 1920, and the value of taxable property in the same time from \$25,151,000 to \$46,013,550.

Canada's Eighth Industrial Centre

According to the 1918 industrial census, London had 380 manufacturing establishments. At these 10,254 people found work and received salaries and wages totalling \$8,702,694. The capital invested in these industries was \$34,547,811; the cost of materials used in manufacture \$20,505,633; and the total value of production in that year \$39,104,056. In the year 1920 alone, three industries of the first importance were added to the city's activities besides several smaller ones and branch plants, whilst the expansion of the city's industrial works is still going on.

Among the city's more important branches of industry are the manufactures of iron and steel goods, wood, leather, brass goods, wearing apparel, hosiery, gloves, furniture, engines, agricultural implements, tinware, biscuits, candies, boilers, paper, boxes, chemicals, breweries, etc. The city holds out advantages of many kinds for the location of new industries, particularly in branches of the iron and steel trade, boots and shoes, textiles, garments, etc.

London is, in fact, an excellent point of location for a wide variety of industrial enterprises. As a distributing point to the home market it occupies an unusually favorable position. The western Ontario peninsula, of which London is the metropolis, has a population of upwards of a million people, or about one-ninth of the total population of Canada. These people are easily reached through the network of railways entering the city. In regard to the great eastern and western markets, it has shipping facilities easily accessible by rail and lake. The city-owned electric line to Port Stanley provides a water route to car ferries and lake passenger and freight lines. Through motor stage lines it has communication with a number of neighboring municipalities.

The availability of power from Niagara makes both for a cheap and adequate supply, and, in the case of new industries, there is a partial exemption from taxation and special plans to reduce the initial cost of the establishment of desirable branch factories.

Future of Montreal Port

The closing of the port of Montreal with the termination of navigation on the St. Lawrence brought to a conclusion the most remarkable season in the export history of that port. Shipments of agricultural produce, not only of Canadian but also of United States origin, exceeded by a very wide margin all previous records, taxing the large capacity of the harbor to the limit and creating a scene of unprecedented activity. The gratifying feature of this phenomenal activity is that it is not brought about by purely temporary or transient conditions, but is occasioned by circumstances which should ensure in the fu-

ture a yet greater volume of trade. Indications in other phases of activity than the export of merchandise, are not wanting to forecast this prospect.

The prime cause of this unusual movement rests in the passing of the Emergency Tariff by the United States, virtually cutting off the export of Canadian agricultural produce by way of the border, and diverting the voluminous products of the western prairies to the Atlantic for shipment overseas. Whilst this diversion has only been effected and experienced within the past few months, it is safe to say that in seasons to come an ever greater volume of trade will pass out of Canada by the Atlantic outlets.

The grand total of grain by boat and rail into the port of Montreal from May 1st to December 1st, 1921, reported by the secretary of the Montreal Board of Trade, reached 140,036,445 bushels, a volume in excess of all other Atlantic ports combined from Halifax to Philadelphia and Newport News including the port of New York. A total of 64,559,360 bushels of grain arrived by lake boats and 75,557,069 by rail. Total wheat accounted for 56,652,609 bushels; corn 45,593,443 bushels; and oats 22,389,667 bushels. Shipments of wheat to Montreal from the United States rose from 11,648,250 in 1920 to 27,526,000 in 1921, and corn from 85,816 bushels to 25,178,581.

Increasing Export of Grain

The total export of grain of all kinds from Montreal in the season was 119,602,189 bushels, the significance of which is realized when compared with the previous year's total of 53,143,305 and the previous record of the port of 75,361,829 in 1914. Though wheat showed a substantial increase the most remarkable development was in corn which from shipments of about half a million bushels in 1920 jumped to more than forty-three million bushels in 1921.

The shipment of cattle to the overseas market did not commence aggressively until the season was well advanced, and yet in the course of the seven months of open navigation, 35,000 head left for Liverpool and Glasgow, whereas shipments via the St. Lawrence in the previous years have been negligible.

There are other developments, assured and projected, in the port of Montreal, deeply significant of the general appreciation of the importance of its future. Many shipping companies, for instance, are reported to be asking for docking rights in the harbor, and the coming spring on the St. Lawrence should see a movement of unparalleled activity. According to the plans of the steamship companies, nearly twenty additional trans-Atlantic passenger steamers will be using Montreal as their western terminal in Atlantic traffic. An increase in cargo vessels is naturally forecasted. Already the St. Lawrence

river carries more than one third of Canada's national trade to and from the Port of Montreal, the annual volume of which exceeds \$750,000,000, and prospects are that both the volume and the proportion will increase.

The Continent's Second Port

Montreal is already the second port of the American continent, its fifth city in respect of population, and the greatest inland port. It is the principal point on the American continent for the export of grain and other agricultural produce, and now the greater part of the enormous harvest of the western prairies is finding its outlet by way of the St. Lawrence instead of across the international border.

The work of developing the accommodation and capacity of the harbor is a continuous work, progressing unceasingly. To date, at a cost of more than \$30,000,000, the harbor provides one hundred steamship berths from 350 to 750 feet in length, with a depth of water from 25 to 35 feet. There are two large elevators at which nine vessels can be loaded with grain simultaneously, sixty miles of harbor railway, and a total wharfrage of about twelve miles. Montreal has trade relations with every country of the globe. During 1921 twelve of the world's greatest shipping lines used the port as a terminal whilst the number of vessels arriving yearly approximates one thousand.

Agricultural Education

The finest proof of the standing of agricultural education in Canada and the excellence of the agricultural colleges of the Dominion was given at the Chicago International Livestock Exposition when the Ontario Agricultural College of Guelph, the Manitoba Agricultural College of Winnipeg, and the Macdonald Agricultural College of Quebec covered themselves with glory in the judging contests, winning the first prize in individual standing as well as other awards.

F. W. Walsh, a member of the quintet representing the Province of Ontario, with a score of 891 out of a possible 1,000, secured the premier judging honors. R. E. White, of the same College, finished fifth with a score of 867, and G. E. Rathby, also of Ontario, was fifteenth in the standing, with a mark of 831. In the contest for aggregate college honors, the Ontario team was just nosed out by that from Ohio. A survey of the history of the college, however, reveals the fact that this honor has already on a previous occasion fallen to its representatives.

The great merit of these achievements will be appreciated when it is considered what a small percentage of the total the Canadian student body represented in comparison with the numbers from all the States of the Union. It is concrete proof of the superlative quality

of Canadian agricultural education and reflects in the most creditable manner upon the Dominion's first pursuit of farming. This exposition, with its competitions which are comprehensive and exhaustive, is regarded in Canada no less than the United States as the criterion of agricultural efficiency and display, and it may justifiably be assumed from these successes that Canadian agricultural colleges take second place to none.

Educating the Farm Child

All this bears on the general fact that the Dominion regards its first industry as its basic of all progress present and future, and in this appreciation spares no effort or expense in its promotion. Not only is the farmer aided and encouraged in every way by the Government, Federal and provincial, but all possible is effected in the line of education to prepare the farm child for his great destiny and in training him to become the most efficient agriculturalist. At the apex of this training comes the agricultural college.

Educational matters being under the jurisdiction of the various provinces, agricultural scholarship comes under this head and the agricultural colleges are instituted and partially supported by the provincial governments. The Agricultural Instruction Act, of 1913, provided for the payment to the provinces of the sum of ten million dollars in a period of ten years for the purpose of aiding and advancing the farming industry of Canada. It was intended to supplement provincial appropriations and with a view to enabling the provinces to finance and carry out instructional efforts in the interest of agriculture in a more extended and comprehensive manner than would otherwise be possible—to promote better farming methods and encourage agricultural education.

Schools and Colleges

Agricultural colleges are to be found all over the Dominion, serving the peculiar needs of the farmers of every section. Alberta possesses the Alberta Agricultural College as part of the provincial university at Edmonton as well as six agricultural schools in various parts of the province. British Columbia has an agricultural faculty at its university, as has Saskatchewan. Manitoba Agricultural College at Winnipeg has created an enviable reputation for itself and is open to any student irrespective of previous education. New Brunswick has two agricultural colleges and Nova Scotia one establishment. Ontario has the Agricultural College at Guelph with more than a thousand students and two other establishments. Macdonald College, near Montreal, with nearly eight hundred students, is supplemented in Quebec with colleges at Ste. Anne de la Pocatiere and La Trappe, Oka, both affiliated with Laval University.

Agricultural colleges in Canada have been so instituted and arranged that the best possible agricultural education is within reach of any boy or girl or youth aspiring to the pursuit of scientific farming. To meet the needs of the people of the farm who find it impossible to get away to take the longer courses, short, intensive instructional courses are given in the winter months.

Then in the fear that even so some may not be reached, the college goes to the farmer, and by means of specially equipped trains travelling through the country takes a demonstration and instructional course to the farmer's door.

The Progress of Quebec

Quebec is the largest of the provinces of Canada with an area of 703,653 square miles or more than 462,000,000 acres. It has eighteen cities, eighty towns and more than two hundred and twenty villages. In Montreal the province possesses the second port of the American continent, the first inland port of the world, and the fifth city in point of population on the continent.

Quebec has been richly endowed by Nature with all manner of gifts, forests, minerals, fisheries, and fertile agricultural land which she is intelligently exploiting and bringing each year into a higher revenue-bearing state. Admirably situated for expansion and development, she has profited by these natural conditions, and a survey of her economic history for the past decade or so indicates a substantial growth in every phase of her provincial life.

Recently published census figures give the province a population of 2,503,548 which, compared with the 2,002,712 people registered at the 1911 census, indicates for the decade, an increase of more than half a million or slightly over twenty-five per cent. Montreal's population, which in 1911 was half a million, has increased in ten years by more than fifty per cent. At the time of the 1911 census, 970,094 of the population were returned as urban residents and 1,032,618 as rural. The proportion is agreed upon as being about the same at the present time. Approximately eighty per cent. of the people of Quebec province employ the French language.

Agriculture the Principal Industry

Agriculture may still be said, in spite of commercial and industrial development, to be the principal industry of Quebec, fully one half of the population being engaged in the many phases of work upon the land, though only about one-twentieth of its area has been brought under cultivation. Progress in agriculture in recent years has been remarkable. Whereas the total value of agricultural production in 1910 was only \$20,590,000, in 1920 it was \$217,775,080, a splendid growth.

Wheat production increased from 1,223,000 bushels in 1911 to 3,775,000 bushels in 1920, and in the same period, oat production increased from 37,500,000 to 66,729,000 bushels, and barley from 2,271,000 to 4,910,000 bushels. Whilst the value of the livestock on the farms of the province was \$122,298,171 in 1914, its value in 1920 was \$206,814,000,—nearly doubling in the six year period.

A phase of agriculture, which is peculiarly a Quebec one, is the production of maple sugar. The sugar maple is found extensively in the province, and the product of the tree is extracted and manufactured for domestic as well as commercial production. The commercial production has grown rapidly in recent years and risen from a value of \$1,680,393 in 1911 to \$6,743,141 in 1920. Quebec is also one of Canada's tobacco producing regions, and in this, crop production has made the same excellent strides of progress, increasing from a yield of 10,095,900 pounds in 1911 to 26,400,000 pounds in 1920.

In the Gulf of the St. Lawrence and her rivers and inland waters, Quebec possesses valuable fisheries which rank as fifth among those of the provinces of the Dominion with an annual production value of about two and a half million dollars. The principal species caught and marketed are salmon, lobster, cod, haddock, herring, mackerel, clams and smelts. In the fisheries the same progress is noted in enhancing provincial revenue and from a value of \$1,692,476 in 1910 they increased to \$2,591,982 in 1920.

Wide Variety of Mineral Deposits

Quebec has been generously gifted with a wide variety of valuable mineral deposits, the annual revenue from the exploitation of which amounts to more than twenty million dollars. A feature of the mineral industry is its virtual monopoly of the world's supply of asbestos. The growth of the mining industry can be gauged from the fact that whilst the revenue from this source in 1900 was \$2,546,076, and in 1910 \$7,323,281, in 1920 it amounted to \$27,722,502. In the last decade the value of asbestos production has increased from \$2,685,441 to \$14,674,572; gold from \$11,800 to \$19,346; and silver from \$11,500 to \$58,032.

A great source of wealth is its timber, which, through an intelligent policy of conservation, is being preserved as a perpetual producer of revenue. The 111,600,000 acres of forest preserves are valued at \$445,000,000 and it has been estimated that there are 600,000,000 cords of pulpwood available in the province. While statistics of the lumber industry ten years ago are not available, the healthy manner in which the lumber industry is growing may be realized from the fact that in the three-year period from 1917 to 1919, the value of the forest products industry rose from \$35,585,196 to \$58,328,477. The value of sawn lumber increased from \$17,270,908 to \$39,269,903 and that of other forest products from \$18,314,287 to \$19,058,574.

Continued Expansion Assured

Quebec is admirably situated to expand industrially and commercially, and in her manufacturing industries the same strides in progress which she has exhibited in other phases of her provincial life are noticeable. Whereas in 1910 there were 6,584 industrial establishments in the province, at the time of the last industrial census, in 1918, there were 10,552 such establishments. Employees in the period had increased from 158,407 to 208,149; the capital invested in plants from \$326,946,925 to \$834,751,346; the materials utilized in manufacture from \$184,374,053 to \$458,951,916; and the plants' production from \$350,901,656 to \$900,453,967.

In every phase of her provincial life, Quebec, in a survey conducted over any number of years, exhibits steady development and the most gratifying progress. The province is admirably adapted to manufacturing and commercial enterprises of all kinds, with excellent communication with the United States, and rapid service to the British Isles and continental Europe. With a wealth of water powers, aggregating 7,000,000,000 horse-power, fine waterways, seaboard, and harbors, there would seem to be no hindrance to uninterrupted progress.

A Land of Homes

The greatest of instinctive desires in the human race, ever dominant though frequently from necessity stifled, is the ambition to own a home with a piece of land about it—a place wherein to take secure anchorage, a harbor in old age, an inheritance to posterity. This craving for possession is the fundamental of man's life endeavor, the ultimate goal of his efforts. To a comparatively small section of the populace is it given to possess an ancestral home, a home and lands to be theirs and their family's for all time. Statistics show that a small per-

centage of even city dwellers own their own, houses or flats which never become homes in the best sense of the term. Those who dwell therein are at the perpetual mercy of landlords, of whims and circumstances; home becomes merely a temporary habitation; they may have to pull up anchor at any time and pass off as ships to other ports. At the best it is a confined space, limited by walls of brick, fortunate if possessing a few feet of garden, a constrained and tightened atmosphere, an air breathed in common with a mass.

The man who truly owns a home is the farmer whose every activity radiates from his habitation. From his house, shabby or pretentious, he surveys the broad acres about him in that sweet knowledge of absolute possession, in the realization that the fruitful land is his for all time and can never be taken from him. There is a satisfaction in owning a farm, apart from the palpable pleasures of revenue, which nothing else in life exactly imparts—every operation and improvement reacts to the owner's benefit and aggrandizement. Nearly all landless city men experience this vision at one time or another, but not all have the courage or the ability to follow it into reality.

The Lure of the Home

Canada is one of the few countries remaining at the present stage which offers opportunities to men of all ranks, even those of little worldly wealth, to establish permanent homes to be theirs and their posterity's for all time. Pre-eminently Canada is a land of homes and a land of vacant spaces waiting for further homes. Here the landless, for nothing or the proverbial song, may secure rich virgin lands of extensive acreage which they need not leave until their mortal days are ended. Here the city dweller tired of the perpetual daily grind, of the monotonous, visionless prospect, of the weekly wage which must stretch to cover so many expenditures, can, with little capital, arrive at his dreams of the out o' doors with work that holds a change in its every day, to live on nature's bounty without rent to pay, and expenditures and taxes minimized.

Thousands have effected it. Each year thousands of others who never knew the real meaning of home are finding its true significance on the Canadian expanse. Canadian farmers comprise men of all stations, all ranks, all trades and professions, as many men from the cities as spent their youth on the farm. The lure of the land has seized them, the desire of a home has drawn them to the country which has so many homes to offer them.

Canada has satisfied them in furnishing the security they sought of a permanent haven for life, a piece of the earth to be theirs for all time, truly an ancestral dwelling; in its most comprehensive sense—Home.

Motion Pictures in Canada

One of the newest born of Canadian industries, but one which has achieved such signal initial success as to leave no shadow of doubt as to its future importance to the Dominion, is the motion picture industry. Not only is Canada coming to use motion pictures to an ever increasing extent in every phase of her national existence, but her home manufactured films, distributed broadcast, are widely advertising the Dominion in the most effective manner, her beauties, her opportunities, her industries, and her agricultural progress. The fact that Canadian produced and manufactured films have been so favorably accepted and commented upon in all parts of the world is proof of the high standard of Canadian production, a bright augur for the future of the industry.

There is no reason why Canada should not attain prominence in the motion picture industry, and at the present time much of the material she might be using is going to the building up of the industry in other countries and the Dominion being exploited in every utilizable phase. There is no greater world interest than in the various activities of a young nation in the building and developing stages where the romance of tradition blends with the materialism of modern construction. Canadian scenery is unsurpassed and attracts thousands of tourists and sightseers every year, whereas the motion picture can and does bring these same beauties before millions who are not in a position to travel. Furthermore, it has been adjudged by experts that the Canadian climate lends itself in a particular manner to open air camera work, and in this is found one of the reasons of the high quality of Canadian-made motion pictures.

Canada is importing positive film to the extent of more than a million and a half dollars a year. In 1921 she imported to the extent of \$29,581 from the United Kingdom, \$1,629,424 from the United States, and \$1,887 from other countries. From the little nucleus created, with all her advantages, it is hoped to build up the Dominion industry until she is meeting all her own needs.

Dominion and Provincial Production

It is in profiting by her natural advantages that Canada has made her initial successes in moving pictures—in the scenic picture and travelogue, the industrial and educational film. Firms in Montreal, Toronto and Calgary are engaged in this kind of work and have succeeded in making the Canadian travel picture famous, to be encountered in theatres in all parts of the world. Many dramas of excellent workmanship have also been produced in Canada, notably the cinema versions of the works of James Oliver Curwood and Ralph Connor.

The great value of motion pictures in advertising and educational work has long been recognized by the Dominion and provincial governments, the railways and larger industrial organizations. The Dominion government makes use of them extensively in practically every department. The Department of Trade and Commerce has a notable list of films depicting all the economic phases of Canadian life. They are used most successfully in advertising the Dominion abroad and are of incomparable value in bringing before peoples of the old world the conditions and customs awaiting them in the new land and so preparing them for national assimilation.

Ontario has a motion picture bureau which is busily engaged in advertising the province elsewhere as well as carrying on an energetic educational campaign in the rural districts. All branches of the provincial government make use of the bureau as an aid in their work. Motion pictures have been adopted as an integral part of the agricultural extension work of the province of Manitoba in all the phases of agricultural work and in the line of lighter entertaining propaganda. Exchange is made with the film productions of other provinces. Saskatchewan has a similar bureau co-ordinating the moving picture activities of the various government departments and the University.

Quebec has long realized the value of the motion picture in teaching, especially agriculture, and it is being used very extensively in all phases of provincial government work. Nova Scotia has its motion picture bureau and has produced a wide variety of films depicting Nova Scotia's charming life and modern and advanced methods of agriculture and horticulture. The motion picture work of the University of Alberta is well known all over the province, for besides providing films of an educational nature it distributes films of foreign travel and entertainment in the rural districts.

A Small but Growing Industry

It is significant to note, in view of the future of the industry, that all these films are Canadian produced and manufactured, the first stage in the growth of a purely Canadian industry. The motion picture, as provided by the various governments and universities, has revolutionized rural life, and in conjunction with the subtlest education gives a deal of wholesome entertainment. The Canadian-made film is enlisted in the aid of the farmer, the student, the salesman, the business man, and its use is daily increasing.

The railways of Canada have been remarkably to the fore in keeping abreast of the times and issuing motion pictures illustrative of Canadian life and resource. In this manner are the great opportunities of Canada as a land of the future visualized, expansion induced to her agriculture and industry, and the great natural resources of the Dominion advertised broadcast. Tourist traffic is created through the lure of Canada's pictured beauties, and settlement encouraged through the reception of a clearer understanding of benefits and conditions than could otherwise be imparted.

A new departure in Canadian steamship travel was effected recently when the Canadian Pacific Steamships inaugurated moving picture entertainments upon their Atlantic vessels, using only films of Canadian manufacture, for the main part depicting scenes of Dominion life and activities. Three shows will be given on each voyage east and westbound, not only entertaining the tourist and traveller but educating Canada's new citizens to the life of which they are coming to form a part.

The move in the Canadian motion picture industry at the present time, is to get away from dependence on other countries for production and manufacture. Canada has all the requisites for successful production but lacks the capital necessary to any great expansion. A good beginning has been made in a splendid kind of picture, and the nucleus formed of a Canadian motion picture industry will develop with Canada's increasing needs and demands, offering many openings to those who will engage in it.

The Welsh in Canada

Generally considered the Welsh cannot be termed a migratory people. Since when their ancestors, the Celtic inhabitants of Britain, retired into the fastnesses of the hills of Cambria, the race has taken deep root there, loving their beautiful, mountainous land with a passionate affection, maintaining a national identity through a retention of language and clinging to custom and tradition, and with little thought of moving elsewhere.

With a population of little more than a million and a half souls in a country of substantial area, congestion or over-crowding has never been a problem and the prime occasion of most emigrating movements has never threatened them. The greater portion of the little land is devoted to the pursuit of agriculture and a large section of the population consists of farmers, happy

and content on their little holdings. In certain sections of the country, however, particularly on the south coast, conditions differ vastly. Here are to be found deposits of coal and other minerals, some of the most valuable in the world, with dense industrial settlement about them. The Welsh have always been renowned for their qualities as miners, often considered the finest in this pursuit in the world.

There has nevertheless always been a certain exodus of the Welsh people from their land and they are to be found in all parts of the world. It is claimed that Welsh colonies, settling under William Penn, first colonized Pennsylvania, and the extensive mineral deposits of that State, combined with the proclivity of the Welsh people to follow the pursuit, lends support to the supposition. In Canada one might dwell long or travel far, outside of the larger centres, without meeting a Welshman, but when one native of old Cambria is encountered there is assurance of meeting many. The Welsh are a gregarious race and in emigrating to Canada have settled in colonies, especially in the Western Provinces. At the time of the 1911 census there were 24,848 Welsh in Canada. Since that time they have arrived in the Dominion at an average rate of about one thousand a year, so that Canada's Welsh population at the present time may be considered about 35,000.

Admirable Characteristics

According to Captain Griffith, Canadian Immigration Agent in Wales, colony settlement is claimed to be the most satisfactory method of colonization for the people of this race, and the manner in which these Cambrian settlements thrive and the prosperity reached by those in existence would bear this out. They are deeply attached to their native land, its history, tradition, religion and language, and manage to preserve the Welsh tongue in the attainment of an eminent degree of bilingualism. They love to meet weekly to have their religious services conducted in Welsh. With a nationally inherited love of music, the creative ability developed to a high degree, and almost invariably with superb voices, they cling to the musical gatherings established in their home land. By this system of colonizing they can best preserve those customs to which they are so attached and retain those characteristics they do not wish to lose. Even when living in the larger centres where community life to the same extent is not possible, they carry out the same ideas through the formation of Welsh societies which exist all over the Dominion. In both Montreal and Vancouver these associations have more than one thousand members, whilst in Calgary and Edmonton each has in excess of eight hundred.

Mining and agriculture being the two main pursuits of their native land they are to be found generally following the same activities.

Miners have naturally migrated to the mining regions of Canada, and are to be found in the Nova Scotia coal fields and in those of the foothills and north of Edmonton, in Alberta, where such place names as Cardiff suggest their origin. There they are sustaining the renown the race has created for itself in the mining industry.

Agricultural Colonies in Canada

Welsh agricultural colonies in Western Canada have been very successful, and the few districts colonized by Welshmen are found to be progressive and prosperous. One of these is at Melville, Saskatchewan, which was settled seventeen years ago largely by Welsh from Patagonia. There are now about three hundred families in the settlement. Ten years ago twenty thousand acres of idle land surrounded this settlement. Now this has all been secured by homestead, the major portion being under cultivation, and some of the farms occupying one or more sections.

There is a large Welsh agricultural colony near Ponoka, Alberta, in that fertile parkland area north of Red Deer. A commencement on this settlement was made about fourteen years ago, the settlers coming in the main from the United States, whither they had emigrated in the first place. This colony is widely known for its successful farming and general state of prosperity. Educational standing is of the highest and the farmers and their families active in every movement for the public good or benefit.

Welsh agricultural colonies in Western Canada are few, but apparently so successful in their working, so rich in those qualities contributing to good citizenship, that Canada would benefit exceedingly by the establishment on her domain of more of these little Cambrias.

The Labor Situation

The labor situation covering the month of November, 1921, as surveyed by the Department of Labor, indicates a continuance in the gratifying trend of a slow improvement in all phases of the situation exhibited in the immediately preceding months. A further slight decrease in the volume of unemployment over the Dominion is noted, whilst there was a further shrinkage in the cost of living as indicated in a weekly family budget of staple foods.

In the various lines of industry logging recorded pronounced expansion of a seasonal character. These gains were especially marked in Ontario, and in the latter part of the month in Quebec, New Brunswick and the Western Provinces. Coal mining afforded more employment, particularly in Alberta, which was also a seasonal movement. Abattoirs, meat-packing, boot and shoe, leather, musical instruments, rubber, pulp, paper, textile, glass, and cement factories and telegraph operations were more

active. Very pronounced shrinkage was reported during the period under review in railway construction and maintenance, a seasonal decline. Sawmills also continued to make marked seasonal reductions in staff, Ontario recording the greater part of the decreases. Declines on a smaller scale were reported in iron and steel products, in railway and water transportation, building construction, hotels and restaurants, telephones, tobacco, electric current and apparatus manufacturing.

Strikes, Wholesale, Retail Prices, etc.

Statements were tabulated from 1,552 labor organizations with an aggregate membership of 174,336 persons, of whom 12,940 were out of work at the beginning of November, a percentage of 7.4 as compared with 8.5 in the previous month. The government employment offices were responsible for placing in regular employment 20,472 men and 2,542 women, and in addition, 7,386 in casual employment. Vacancies notified by employers numbered 36,089.

The loss of time on account of industrial disputes during the month of November was greater than during either October, 1921, or November, 1920. There were in existence during the month some eighteen strikes involving about 3,950 work-people and resulting in a time loss of about 98,100 working days.

The prices movement continued downward, the index number of wholesale prices and the average cost of the retail food budget being both lower. There were decreases in farm products and foods, except dairy products; also in textiles, lumber, and house furnishings. Raw furs were up. The average cost of a weekly family budget of 29 staple foods in some sixty cities in November was \$11.08 as compared with \$11.48 at the beginning of October, \$15.32 in November, 1920, and \$7.96 in November, 1914.

Northern Ontario Gold Fields

Northern Ontario has had a phenomenal rise to first place among Canada's gold producing areas, rapidly leaving behind in production, the famed fields of the Yukon and outstripping by a wide margin the mining areas of other of the provinces of the Dominion. In 1919 the gold fields of Northern Ontario produced 65.9 per cent. of the gold of all Canada; in 1920 they produced 73.7 per cent. of the same total. Production in 1921 has been more than maintained, a handsome increase being indicated in returns to date, whilst developments during 1921, not completed sufficiently to increase output in that year, will result in a material increment in production in 1922.

The 1920 production of the Northern Ontario gold fields amounted to 564,959 ounces and in the previous year 505,739 ounces, an increase in 1920 of 11.7 per cent. In the declining months

of 1921, gold ore was being put through the reduction plants of the gold mines of the Porcupine and Kirkland Lake fields at an aggregate rate of approximately 2,066,400 tons every thirty days. Based upon the achievements of the months of September and October, an estimate of \$1,584,000 in gold bullion per month is made. This means that ore is being drawn from the gold mines of Northern Ontario at the rate of approximately 25,996,800 tons annually, resulting in a yearly production of about \$19,008,000. This means an increase of more than seven million dollars over the 1920 valuation, according to the estimate of a writer in the Canadian Mining Journal. Another estimate of the Temiskaming district, which embraces the Porcupine and Kirkland Lake fields, is a daily rate of \$52,300, or equal to more than thirty per cent of the total current yield of the United States.

The preliminary estimates of the Canadian Mining Journal of the value for the year, by individual mines, is as follows:—Hollinger Consolidated, \$12,000,000; Dome Mines Company, \$2,880,000; McIntyre - Porcupine, \$2,100,000; Wright-Hargreaves, \$720,000; Lake Shore Mines, \$540,000; Teck-Hughes Gold Mines, \$384,000; and Kirkland Lake Company, \$384,000.

Over 3,000 Men Employed

In order to produce gold at the above rate there are approximately 2,600 men employed at the mines of the Porcupine district, whilst there are approximately 500 men at the mines of the Kirkland Lake district, making a total of 3,100. These figures deal only with the sever mines at present producing and do not include properties in the development stage which, on a conservative estimate, would add another 300 or 400 men to the total employed.

The prospects for 1922 are even brighter and indications would lead to the assumption that this year's production will again be substantially greater, as the result of the initial steps in development effected in 1921, which will be completed this year. The same authority estimates that completed developments will add to production to the extent of 780 tons in daily capacity, divided as follows:—Schumacher, 200 tons; Porcupine Crown, 140 tons; Porcupine V.N.T., 100 tons; Dome Lake, 100 tons; Tough-Oakes, 140 tons; and Ontario-Kirkland, 100 tons.

Allowing for an income of \$10 per ton, and not making allowances for enlargement of plants, which will undoubtedly take place, the daily income of these mines should reach approximately \$7,800, or at the rate of \$2,847,000 per year. This production, added to the current output, tends to indicate a yield at the rate of \$21,855,000. Additional probabilities are increases of possibly \$2,000,000 a year on the Hollinger and \$1,000,000 on the McIntyre, thereby making a total of close to \$25,000,000 within the range of

possibility within the next year or so, or about six million dollars in increase over the 1921 estimated value.

The Eel Fishery

Recently, to meet a sudden dearth of eels in the New York market, some 200,000 of these fish, worth \$100,000, were shipped to the United States city in three specially constructed barges which were so arranged that water flowed in and out of the vessels at all times, keeping the fish alive. The fish, stated to be the finest kind of silver eels from the mouth of the St. Lawrence river, passed through both salt and fresh water in their journey without suffering any ill effects and arrived in New York in the pink of condition. The sudden discovery of the absence of eels from the fishstalls of New York and the ensuing demand, called for hasty catch and quick shipment, and no expense was spared in securing the amount needed and in getting it to the destination.

This urgent demand of the United States and the fact that a shipment of such extent could so speedily be amassed and so rapidly absorbed by the market, may have a special significance for the fishing industry in Canada and the possibility of the Dominion enlarging and expanding her market for this fish when it is considered that the total annual export falls in value below this special consignment.

Eels are common in all Canadian rivers discharging into the sea, and the specie found in the waters of the Dominion is of a high quality and in general favor. The eel was exploited at a very early stage of Canadian history, the discoverers and founders of New France describing the Indians as indulging extensively in the fishery and the catch forming an important item in their diet. Fishing along the St. Lawrence river by day was practiced with a wicker basket, into which the fish were led at low tide through a way arranged by heaping stones along the beach. At night the Indians fished for the eel with a harpoon, a light at the prow of the canoe. They were in the habit of smoking the catch and hanging the cured fish about their wigwams for future consumption.

High Quality and Flavor

The industry in Canada at the present time is not very extensive, though holding possibilities in the prolificness of the waters in many sections. A valuable fishery is carried on on the Richelieu River which brings in from \$10,000 to \$15,000 to its owner. There is another profitable fishery carried on from Navy Island in St. John harbor, New Brunswick. These are the only two commercial enterprises of any size and import. Of recent years, eels have been introduced into Lake Ontario, where they are thriving, with the promise of returning a hand-

some revenue to fishermen who will engage in their catch in the near future.

The high quality of the eel caught in Canada, especially in the St. Lawrence, has found for it great and lasting favor with the people of cities of the United States, and practically all of Canada's catch of this fish goes to that country. The total export to the United States in 1920 was valued at \$85,579 and in 1921, \$83,854. About \$700 worth only was exported to other countries in 1920, whilst in the following year the United States took the entire export. The eels are shipped in various manners. Some, as in the recent large consignment, travel to their destination in a live state and are sold fresh, though some may be smoked. Fish, frozen on the Canadian side, are also shipped in this condition to markets across the line.

The recent substantial demand from New York may mean the possibility of an expanding market and it would be worth while for fishermen to investigate this. Certainly there remain opportunities for widening the fishing and sale of this fish, and the waters of Canada, in their fertility, present no handicap to this.

The Farmer's Timber Supply

The various phases of work which have their sources in Canada's forests, combine to make the lumber industry one of the most important of the Dominion, and the total commercial cut together with the various allied industries utilizing lumber in manufacture, run the aggregate value each year to a handsome revenue. This, nevertheless, does not comprise by any means the entire value of Canada's timber to the country, and there is a large domestic consumption of which no record or statistics are available. Timber plays no small part in relation to the Dominion's first industry of agriculture, and the presence and availability of timber in agricultural sections means a great deal to the farmers in those areas, and makes for a general economy.

What are generally designated as the Prairie Provinces of Western Canada, which have, of recent years, become one of the first agriculturally producing regions of the world, are popularly supposed to be bare of any tree growth from their very name. Those who know the region, however, are aware to what an extent the name is a misnomer. While the southern portion of the plain which the three provinces takes in appears to be a bald, denuded stretch, clumps of brush and trees are always to be found in the vicinity of watercourses, which are numerous, and in the region of the foothills. These supplies render a certain amount of timber available as well as providing shade and shelter to stock.

When one travels north, however, the prairie is left behind and one reaches what is a fairly, clearly defined division between the bald plain and the timber country. This growth is not

in the nature of forest, but from the scattered and somewhat orderly distribution, with the appearance of having been especially laid out, has given to the country the description of parkland. The timber is never so dense or heavy as to impede or curtail ordinary farming operations, yet gives the farmer all the advantages which a tree growth possesses for a farming community. For his stock it is summer shade and winter shelter; for the farmer, fuel, fencing and even material for building.

Government Reserves Available

Where farmers have settled on the clearer sections of the parklands, or are indisposed to cut down their own trees, timber for their many needs can be cut on adjacent unfilled lands or on the Government forest reserves which have been held back from settlement and are to be found in many parts of the Western Provinces. Though these reserves have been made for the preservation of the timber, cutting is permitted of the mature timber to enable lesser sizes to attain full growth, and for other reasons. There are more than 32,500 square miles of forest reserves in the Prairie Provinces which have at all times a large supply of surplus timber available for the many uses of the farming settlements about them.

In the North Battleford district of Saskatchewan, for instance, there is a forest reserve which is one of the most valuable assets of the rich farming country of the Battleford region. Farmers, who have a greater and wider need for timber than others, draw their supplies of fuel, fencing, and building material from this source. Small private mills have been erected for the purpose of manufacturing lumber, and the farmer secures the necessary material for his house and buildings very economically, from timber he has cut himself.

Nature in creating Western Canada has provided for many of the needs of the settlers to come, and in the timber, with which she dotted the country, is one of the farmer's most valuable assets.

Graphic Forestry Exhibits

By Robson Black, Secretary, Canadian Forestry Association

Educational enterprises sometimes take novel forms, but few educational novelties seem to have proved more successful in gaining public attention than the specially-equipped railway coaches employed by the Canadian Forestry Association.

One of the coaches, stripped of the usual seats, was packed with graphic exhibits, which included models of forests, showing the devastation of forest fires, fire protection apparatus, wireless equipment, etc., and electrically lighted show cases displaying hundreds of strange articles made from wood, such as imitation silks

and leathers, wood distillates, etc. Electrical illusions gave transformation effects from a beautiful forest to a burned ruin, and by means of scores of beautiful transparencies illuminated by electric globes, the aesthetic side of forest preservation was made highly impressive. In short, the purpose of the Forest Exhibits Car was to drive home the lesson that forest fires are a public enemy, affecting the personal welfare of every citizen of Canada.

During its tour of six months, more than 120,000 people visited the car. The trip covered approximately nine thousand miles. Every evening motion picture lectures were given.

The Association's second travelling enterprise, the Tree Planting Lecture Car, travelled eight thousand miles in Manitoba, Saskatchewan and Alberta, and fifty thousand people attended the tree planting lectures and demonstrations given by Mr. Archibald Mitchell, a well-known Western expert, and his assistant.

To the Settler's Front Door

The purpose of the Tree Planting Car was to take information and inspiration through a novel and interesting medium to the front door of the settler who has greatest need of such help. The fact that the enterprise was connected with no government or commercial interest and was purely a citizen's movement gave it a particular appeal. Mr. Mitchell, the chief lecturer, has a great gift for rousing the interest of farmer audiences and a thorough mastery of the whole subject of tree planting under peculiar prairie conditions, gained by thirty years experience.

The Lecture Car was built with a sloping floor and special seating, so as to contain from 125 to 150 persons, and at every stop two illustrated lectures and demonstrations were given. In numerous instances, municipalities were supplied with complete working plans for a local park, drawn up according to local requirements, and all sorts of societies were given practical help in improving school and church grounds.

The inspirational effect of such a tour cannot be over emphasized, for tens of thousands of men, women and children to-day have an intelligent comprehension of the value of shelter belts of trees, in home beautification, in the prevention of soil drifting, the protection of buildings and live stock and the improvement of moisture conditions.

Even in a highly unfavorable business year, the Canadian Forestry Association succeeded in financing its educational enterprises from private sources, with the aid of a few small government grants. The work will be continued throughout the winter through other channels developed by the Association.

The New Government

Following the defeat of the Liberal-Conservative government under the premiership of the Hon. Arthur Meighen at the polls on December 7th, the Hon. Mackenzie King, leader of the Liberal Party, assumed the premiership late in the year 1921. According to the Canadian constitution, as laid down in the British North America Act of 1867, the new government may remain in power for a period of five years. There is no fixed date for elections but a government may not remain in office for longer than that period without going to the people for endorsement, to ensure that it still has the public confidence as expressed at its election. It is the duty of the premier and his government to resign when the trend of affairs clearly indicates that their actions no longer have the country's approval.

Eastern and Western Canada are represented in the new cabinet which was sworn in on December 29th, 1921, the personnel of which is as follows:—

Premier, President of the Council and Minister of External Affairs—Mackenzie King (Ontario).

Minister of Finance—W. S. Fielding (Nova Scotia).

Minister of Marine—Ernest Lapointe (Quebec).

Postmaster-General—Charles Murphy (Ontario).

Minister of Justice—Sir Lomer Gouin (Quebec).

Minister of Railways—W. C. Kennedy (Ontario).

Minister of Militia and Naval Service—Geo. P. Graham (Ontario).

Minister of the Interior—Charles Stewart (Alberta).

Minister of Health and Soldiers' Department—Dr. Beland (Quebec).

Minister of Trade and Commerce—James A. Robb (Quebec).

Minister of Agriculture—W. R. Motherwell (Saskatchewan).

Minister of Labor—James Murdock (Ontario).

Minister of Customs—Jacques Bureau (Quebec).

Secretary of State—A. B. Copp (New Brunswick).

Solicitor-General—D. D. MacKenzie (Nova Scotia).

Minister of Public Works—Senator Bostock (British Columbia), temporarily, to be replaced later by Dr. King, Provincial Minister of Public Works (British Columbia).

Without portfolio—T. A. Low (Ontario), and Senator Dandurand (Quebec).

Motion Picture Films

A print of each of the following films issued by this department is deposited with the representatives listed on the back page. These are available upon application for use by schools, theatres, clubs, societies, boards of trade, and other associations and organizations.

Homemaking by Irrigation.—Irrigation farming in Southern Alberta, the various operations and their results.

The Land of Promise.—Featuring the well-known agricultural section of Battleford, Saskatchewan.

Opportunity.—Illustrative of Western Canadian opportunity, more specifically in the district of Lloydminster, Alta.

Livestock and Dairying.—The fine status and remarkable progress of this industry in Western Canada picturized.

Taming the Last West.—Depicting the evolution of the Canadian West from buffalo range to a modern agricultural area.

The Sunny Side of Rural Life.—The farmer on holiday, showing that life in Western Canada is not all work.

The Evolution of a Grain of Wheat.—The life of wheat seed from the time it is sown until its progeny enters into the composition of a loaf of bread.

Apple Growing in Evangeline's Land.—Orchard cult in the region Longfellow's poem made famous.

The Apple Harvest of the Okanagan.—Gathering and shipping apples in the beautiful British Columbia valley.

Curing Fish in Nova Scotia.—Depicting the various phases of curing and smoking fish in the Maritimes.

The Canadian Sardine.—The sardine caught, canned and distributed.

Some Water Powers of Eastern Canada.—The beautiful and powerful waterpowers of the Eastern Canadian provinces.

The Silver Fox Industry of Canada.—The domestic ranching of silver foxes in Prince Edward Island.

Departmental Publications

Any of the following publications will be sent free on request.

Alberta, Saskatchewan and Manitoba.—A descriptive statistical booklet on the three prairie provinces with full information on the West.

The Park Lands of Central Alberta.—Descriptive of the area tributary to the Calgary and Edmonton line of the Canadian Pacific Railway in Alberta. History, description of soils, development, lands open for settlement, and information for settlers.

Irrigation Farming in Sunny Alberta.—Full description of Alberta's irrigated lands, their progress, production and possibilities.

Business and Industrial Opportunities in Western Canada.—Full listings of industries existing and business openings in the provinces of Western Ontario, Manitoba, Saskatchewan, Alberta and British Columbia.

Canadian Pacific Reserve Farm Lands in Lloydminster and Battleford Districts.—Information of Canadian Pacific lands in these districts, history, farming information, progress, and possibilities.

Canada's System of Government.—Canadian government briefly outlined to portray its democratic traits.

The Story of Canadian Nickel.—History of the nickel mining industry.

Canadian Oil Exploitation and Prospects.—An expert engineer's history of Canadian oil development and future possibilities.

Canadian Water Power Development.—Authoritative and exhaustive survey of water power reserves and possible development.

Paper Pulp from Flax Straw.—An investigation engineer shows the possibility of the development of a new industry in the West.

Education in Canada.—The wide scope of Canadian education depicted to show that a settler need have no apprehension in this regard.

A Canadian Grain Handling Plant.—How Canadian grain is stored and shipped. Authoritative article on Canadian elevators.

Value of a Settler to Canadian Railroads.—Computation from reliable statistics of a farming settler's revenue-producing worth to Canadian railroads.

Bituminous Sands of the Athabasca Region.—Description with known values, and possibilities of development of the widely known tar sands of Northern Alberta.

The New Canadian Oil Field.—Dealing with the Arctic oil region of the new strike.

Water Powers of the Maritimes.—Authoritative article on the undeveloped power systems of the Eastern provinces.

Water Powers of Manitoba.—The water powers of this province dealt with exhaustively.

Oleomargarine.—History of oleomargarine in Canada and its future prospects.

Synopses of Natural Resources.—Forty-five pamphlets dealing briefly but concisely with Kaolin or China Clay, Oil Shales, Mica, Fluor-spar, Asbestos, Molybdenum, Magnesite, Fruit, Flax Fibre, Nickel, Coal, Clays, Salt, Copper, Zinc, Silver, Gold, Pyrites, Iron, Potash, Talc, Feldspar, Platinum, Phosphate (apatite), Manganese, Graphite, Cement, Barytes, Gypsum, Irrigation, Petroleum and Natural Gas, Corundum, Sulphates of Sodium and Magnesium, Timber and Pulpwood, Fish, Fur, Peat, Grazing Lands, Mineral Waters, Building and Ornamental Stone, Whaling, Sealing, Wheat, Oats and Barley and Water Powers.

The Department of Colonization and Development

The Department of Colonization and Development has the following offices established in the United States, Great Britain and Europe, whose representatives, at any time, will be glad to furnish information regarding Canadian agricultural, industrial and commercial enterprises.

MONTREAL, P.Q.	E. G. WHITE, Supt., 335 Windsor St. Station.
WINNIPEG, Man.	J. F. SWEETING, Industrial Agent, Canadian Pacific Railway.
CALGARY, Alta.	M. E. THORNTON, Supt. U. S. Agencies, Ninth Ave. and First St. East.
VANCOUVER, B.C.	E. J. SEMMENS, Travelling Industrial Agent, Canadian Pacific Railway.
NEW YORK, N.Y.	L. F. MOWREY, District Representative, C.P.R. Bldg., Madison Ave. at 44th St.
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or any agent of the Canadian Pacific Railway Company or Canadian Pacific Steamships, Ltd. in United States, Great Britain, or Europe.

J. S. DENNIS, CHIEF COMMISSIONER,
Department of Colonization and Development,
Canadian Pacific Railway Company,

Ask the Canadian Pacific about Canada



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February, 1922

Business Prospects Brighter

There is a growing conviction among Canadian business leaders that Canada is on the eve of another important period of industrial development. Even so conservative an authority as Sir Frederick Williams-Taylor, General Manager of the Bank of Montreal and President of the Canadian Bankers Association, is of this opinion; in a recent statement he says: "For two and a half decades, Canada's progress has been phenomenal and continuous. At the moment we are marking time, but we shall have another innings before long."

Among other things, his conviction is based on the fact that Canada has such wealth of natural resources. He says: "The so-called accumulated wealth of a young country is necessarily moderate; the natural wealth of this young country is boundless. Take first our agricultural resources. Think of it! The whole North West was a barren waste only forty odd years ago, and to-day, in a thousand-mile belt across the Prairie Provinces, is one of the greatest grain-producing areas in the world. In the past three years, Canada's sales abroad of vegetable and animal products brought in \$1,900,000,000, a sum in itself approaching the amount of the national debt."

Referring to other important natural resources, Sir Frederick says: "In water power no country is richer. So far we have developed in the provinces of Quebec and Ontario about 1,000,000 h.p. each, British Columbia coming next with 300,000 odd. Let it suffice to add that we have one of the greatest zinc mines in the world, the greatest deposits of nickel and asbestos, with coal mines and fisheries practically inexhaustible."

Among the agencies that have contributed very greatly to Canadian banking development, Sir Frederick gives the Canadian banking system a very high place, for he says: "Among the agencies that have combined to build up our trade, and thus increase our available wealth, the Canadian Banking System stands, in age and excellence, in a class by itself. No country has a better system adapted to its requirements. It has established our name abroad as that of a solid, stable country, remarkably free from panics and financial crises. It has stood the test of time, through periods of depression, through inflation caused by the American Civil War, through the great World War and the troublous years of so-called peace—through the worst, as well as the best of times."

A tribute is also paid to the Canadian Pacific Railway, Sir Frederick saying:—"The Canadian Pacific Railway needs no champion, but as a Canadian I am proud to pay a tribute to this colossus of forty years' growth, this greatest business

creation of modern times, to which Canada owes so much."

New York and London will be especially interested in the opinion of this eminent financial authority on Canada's credit. On this point he says: "As for our country's financial credit, which, after all, is the true test of the standing of a nation, as of a business concern, it leaves nothing to be desired. Were it not for the disadvantage of transferring money from London to Canada, owing to the depreciation of pound sterling, the Dominion of Canada could float a vast loan in England on very favorable terms indeed. On the New York market, too, the Government could borrow hundreds of millions with ease, and on better

The Tide may have been out but is coming in again. You will reach it first if you go out to meet it. By intensifying your work, more business will be created—your efforts will benefit others—and more business means more employment.

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Norman S. Rankin, *Editor of Publications.*
E. L. Chicanot, *Asst. Editor.*

terms than any other country in the world, except the United States itself."

A New Variety of Oats

By F.J. Cowdery, Calgary, Alberta

What appears to be a new variety of oats is being raised by Mr. Alby Kite on his farm at Cluny in Southern Alberta. From tests made by him it seems that this "Mammoth" oats—as it is called—is a very high yielder, with a strong straw and plump kernel, and an excellent drought resister. With such characteristics as these, this new oat may prove as great a blessing to the farmers of Western Canada as did the discovery of "Marquis" wheat.

It was in 1915 that Mr. Kite noticed a single oat root of some sixteen stools growing on some land he was preparing for a garden. On maturing, the plant appeared to be something new in this farmer's experience, so he gathered the grains and seeded them the following year. Hail and other misfortunes have dogged his footsteps, but last fall Mr. Kite had gathered enough seed to put some forty acres into crop. After next year's harvest there should be enough of this new grain to allow its being put on the market commercially, and to be tested out on a wider scale. Samples have already been sent to the Peace River and to Idaho, and enthusiastic reports were received from both these points. As the Peace River farmer put it: "It has turned out so well that I will take a carload if you can let me have it."

Both the new strain and the standard "Banner" oats have been grown side by side on "dry" or non-irrigated land under ordinary farming conditions, so a comparison between these two varieties will prove interesting. In 1918, the driest year for the past decade in the Cluny District, Banner oats were so short they had to be cut with a hay mower for feed. "Mammoth," on the other hand, stood more than three feet high and made a paying crop. The 1917 crop was almost completely hailed out, but neighbors claimed it had every appearance of yielding 125 bushels to the acre, before the storm.

A Hundred Bushels per Acre

This year, another dry season, the area planted on summer-fallow gave a return of about 100 bushels to the acre. The peculiar

drought-resisting qualities are accounted for by the fact that this new variety has a main tap-root some six or eight inches long which reaches well down into the soil and is able to withstand a drought that would be fatal to other strains.

"Mammoth" ripens in about the same period as Banner; i.e., on an average of 110 days. It has a considerably heavier head, however. From 50 to 60 panicles to a stem are considered a good yield of Banner, but it is claimed it is nothing unusual to find between 90 and 120 grains in a single head of the new variety.

The plant has a long, thick straw which enables it to support the heavy head and prevent lodging. In appearance it is similar to the "side" oat, the panicles lying close into the stem. The kernel is short but very plump, somewhat resembling a wheat grain. Samples tested have weighed as high as 46 pounds to the bushel, or 14 pounds over the standard. The quality appears to be up to the average with about 75% grain and 25% hull.

It is naturally impossible to give any authoritative figures as to yield, quality, etc., until this grain has been officially tested over a number of years. The achievements quoted are the results of Mr. Kite's personal experiences, but they all point to a new variety of oats eminently suited to the Western Canadian climate, combining the advantages of both the "dual purpose" and side types. Samples have now been submitted to one of the provincial experimental stations with a view of registration.

Walnut Production in British Columbia

It is only as Canadian life progresses and experimenters and investigators of all kinds give their experiences to the world that the wide latitude of the possibilities the Dominion offers in all lines is revealed. The already wide extent of agricultural production is constantly being added to ever since it was first dogmatically stated that wheat would never be grown successfully in the Canadian North-West, and experience is making ceaseless revelations of new lines of production to which Canadian soil and climate prove admirably adapted.

Alderman Tisdall of Vancouver, as an after-dinner treat to visitors at his ranch in the Fraser Valley, serves walnuts grown on the ranch, the high excellence of which invariably causes comment and a certain amount of astonishment at this fruit being grown so successfully within forty miles of the Pacific metropolis. These walnuts are indeed equal in appearance, quality and flavor to the California variety as attested by the California Walnut Growers' Association, to whom samples

were submitted for examination. The trees were grown on the ranch from seed, and the alderman is an enthusiastic advocate of the permanent establishment of a walnut growing industry in the Pacific coast province.

A valuable feature in walnut production is that the trees thrive admirably and produce abundantly on rough land. Trees are usually planted about fifty feet apart, so that a substantial orchard can be established on a small acreage. The Franquette and Mayette varieties have been found the most suitable for British Columbia growth, and that it is more satisfactory to grow the American black walnut and graft the chosen variety upon it. Hard-shelled walnuts have disappeared from commerce and what is known as the soft-shelled English walnut dominates the market to-day. It has been proved that these grow admirably on the Canadian Pacific coast.

Possibilities of the Industry

Squirrels do not bother the growing crop in settled communities, neither is it the object of attack from caterpillars. The blue-jay in British Columbia is responsible for a certain amount of depredation, managing to crack the nuts in some mysterious manner, but this menace is remediable with a small rifle.

There is a double advantage in growing walnut trees in as much as they also make excellent shade trees, being considered in this regard the equal of soft maples. As such it is advocated that they be planted on smaller areas—in back yards and about houses. In ten years, in addition to their sheltering and beautifying effect, they will be producing a healthy crop annually whilst the commercial value of walnut wood is consistently high.

In marketing walnuts the high grade is selected for dessert purposes, the remainder being divided into lesser grades for cooking, candy-making, etc. Two hundred pounds per tree is not a large yield, which, sold at the lowest estimate of 25 cents per pound returns \$50 per tree. An orchard of one hundred trees at this rate would give annually the very comfortable income of \$5,000. This estimate is low, as, at the time of writing, walnuts are selling in Vancouver at 50 cents per pound.

The possibilities of this industry, points out Alderman Tisdall, to British Columbia; standardized and with scientific methods introduced, are excellent. Walnuts have taken their place as a staple everyday food, used by the housewife, on account of the nutritious qualities, the year round. Canada imports every year from the United States, the United Kingdom, France and China, a million and a half pounds of these nuts which she might be producing herself.

According to California growers, they can be stored for a year or more awaiting disposal without loss from depreciation. With encouragement this promising industry should secure firm footing in British Columbia.

Premier Potato Province

As Saskatchewan suggests premier wheat, so does New Brunswick prime potatoes, and whatever else be said of agriculture in the Maritime province, it has created, and is maintaining in a very gratifying manner, a reputation as one of the richest potato-producing areas on the American continent. Not only is the province a heavy producer, but its product is of such high quality and so generally recognized that demands for it are received from many and widely separated points. New Brunswick is only on the rise in this regard, and may be looked to for yet greater achievements in this regard in future years.

In the year 1921 New Brunswick had 74,875 acres sown to potatoes out of a total Dominion acreage of 701,912, from which it secured a yield of 16,192,000 bushels out of a Dominion production of 110,895,000 bushels. Its average production all over the province was $216\frac{1}{4}$ bushels, a yield greatly in excess of that of any other of the Canadian provinces and of the Dominion average of 158 bushels. The real significance of this production may be further realized by a comparison with the estimated average production of this crop in the entire United States of 87.1 bushels to the acre, or that of 1920, 109.6 bushels.

It is not long since New Brunswick would seem to have awakened to its possibilities in potato raising and started out to take advantage of its potentialities in this regard. Its rise to prominence in potato production has been rapid, and it is only within the last half decade that this vegetable has come to account for such a proportion of the provincial agricultural revenue. In 1915 the annual production was 5,772,000 bushels worth \$3,674,000, and by 1916 this had increased to 7,488,000 bushels valued at \$6,290,000. By 1918 the yearly production was 9,077,600 bushels and the value \$9,077,600. The yield of the year 1920 was 15,510,300 and its value \$10,857,200. Since 1915 the provincial potato crop has increased by more than 170 per cent. and its value by more than 180 per cent.

Excellent Yield in 1921

The excellence of the 1921 potato yield in New Brunswick has already received wide attention from many quarters. The State of Maine has built up a sound reputation for potato growing, yet this year the famed Aroostook region has shipped in several carloads of the Canadian product to ensure a supply of high-

quality, disease-free seed, despite the heavy duty the Emergency Tariff imposes. Recently, twelve thousand barrels of choice Bliss seed potatoes of the New Brunswick brand left St. John to travel direct to Galveston, Texas, where they also will be used as seed. Another large recent consignment consisted of four shiploads of fifty carloads each, which went to Havana where the fame of the New Brunswick potato had apparently preceded it.

Due credit should be accorded the provincial government for the part it has played in New Brunswick's rise to potato fame. Its encouragement of farmers has been unceasing, and the aids it has extended to them have been of wide compass. Of great assistance to the provincial potato growers has been the availability of lime fertilizer in substantial quantities at low rates. New Brunswick is fortunate in the possession of some excellent lime deposits. These the provincial government undertook to develop, and the railways gave sympathetic co-operation in the matter of distribution, so that the lime was delivered to the farmer at a minimum of cost. From the Government lime quarry located at Brookville, in thirteen months, 7,255 tons, or more than 200 cars, were taken out and distributed amongst the farmers of the province.

At the present time Canada is exporting potatoes to the United Kingdom, United States, British Guiana, Cuba, British West Indies, St. Pierre and Miquelon, and in smaller quantities to other countries. Much of this export is of the New Brunswick production. In addition to the natural conditions of soil and climate which New Brunswick possesses and which have produced so desirable a potato, the Maritime province is excellently situated for indulging in the export trade most economically and profitably. With production still on the upward trend greater things in potato production may be expected of New Brunswick.

Flax Fibre Seed's High Germination

An official Dominion Government report has just been received on a germination test of flax fibre producing seed derived from a crop grown on irrigated lands at Tilley, Alberta, some 120 miles east of Calgary.

This crop was itself produced from the seed yields from a small experimental plot of fibre flax which was grown in that locality in 1920. The experiment was made in order to demonstrate the possibilities of the flax fibre industry in Western Canada under conditions of irrigation.

The Government report on the germination of the flax seed produced in 1921 states that a four-day germination of this seed is a record for all Canada, and a ten-day germination is

the highest average of the year, the tests being given as—

Four-day	75%
Ten-day	97%

Good quality fibre seed of high germination is in demand in Europe, and the results of this official test indicate that seed produced in Western Canada will be preferred in that market.

It is now being arranged to make a sample shipment of this Western Canadian seed, sufficient to plant at least 25 acres, to Ireland, and the results of the crop obtained from it will be carefully noted.

This matter is being handled through the co-operation of the Canadian Pacific Railway Company and the Department of Agriculture Flax Fibre Division of the Dominion Government.

Prairie Wild Fruit

The Prairie Provinces of Canada have been so generously gifted by Nature in making provision for the settlers to come that in many respects one may, with perfect justification, apply the term "Land of Plenty" to this area. So much berry fruit is raised in this territory each summer that thousands of gallons go to waste every year for the lack of people to pick and consume it. Fruit grew in profusion on the Canadian prairie long before man was there to see it grow. The Indians used the wild fruit as an important item of their diet, and then had enough left over to make use of the juices as facial and body adornment. It is true that the prairie farmers do not cultivate fruit to any large extent, but why should they, when a bountiful nature has provided them with more than they can use. Each summer farmers and their families pick quantities of fruit, preserving sufficient for every day of the ensuing year, and yet, each season, thousands of bushels go to waste for the lack of people to consume them.

A typical example of what may be accomplished in the way of preserving wild prairie berries is reported from the Battleford country of Saskatchewan by J. F. Bell, a farmer near Medstead. He has photographed two hundred and fifty gallons of preserved fruit which represents only the blueberries and raspberries gathered in his district during the summer, and "put up" against the winter and spring. The black currants, gooseberries, cranberries, and dewberries comprised an additional hundred gallons. Sickness, Mr. Bell states, prevented his family's being able to take full advantage of the fruit-picking season, as he had contemplated preserving five hundred gallons. There was no doubt about the fruit being there, and their failure to reach the mark was entirely due to the inability to get out and pick it.

Eighty Bushels in Three Hours

As an example of the profusion of fruit in the district, he cites the case of three girls from a neighboring farm who went out picking with him one afternoon; in three hours they took home with them eighty bushels of blueberries, the result of their brief efforts.

The countryside was by no means exhausted and the great profusion offered steady picking to a small army. One of the district's features was a solid mass of high bush blueberries, two hundred acres in extent, the greater part of which necessarily went to waste, though for many days it presented a picture of wonderful beauty in its unbroken purple sheen.

Strawberries, raspberries, dewberries, low and high bush cranberries, grow in the same luxuriance; gooseberries and red currants flourish in wild abundance. The supply is much more than enough for the scattered farmers who can but fill the winter's and spring's requirements and permit the greater part to rot.

This district is not exceptional, but on the contrary rather typical of the Canadian West. Bountiful nature has been especially generous to that region and seems to have had in mind the needs of the new settlers when she sprinkled her wild fruits so variously and so lavishly. The profusion and wild distribution form an important asset to the farming settlements and should appeal as an attraction of the first order to settlers. The farmer, busy with the larger phases of grain growing and stock raising, has his desserts ready provided for him without the necessity of cultivation, and can, for the devotion of a little time to picking in the summer, provide himself with ample preserved fruit for the whole of the year.

NOTE: Writing of the summer life of the Indian women and children of the trappers in the Northern areas of the Prairie Provinces, Mr. Arthur Heming in his recent book "The Drama of the Forests" says:—"The women, in addition to their regular routine of summer camp duties, occupy themselves with fishing, moccasin-making and berry picking. The girls join their mothers in picking berries which are plentiful and of great variety—raspberries, strawberries, cranberries, blueberries, gooseberries, swampberries, saskatoonberries, peminaberries, pheasantberries, bearberries and snakeberries."—Ed.

Canada and the Orient

By E. W. Beatty, K.C., President, Canadian Pacific Railway

The limelight has been thrown almost continuously on the Japanese and Chinese at the Washington Disarmament Conference. Appreciation has been shown in the press for Japan's activities during the Great War, and the world has realized that the war brought great prosperity to Japan, which has established her products in every port in the world.

Since China has adopted a republican form of government, young China displays more aggressiveness than was shown under the old regime, and foreign capital and industries are invited to participate in the development of the country. China should become one of the most productive and prosperous nations on earth with the

development of her natural resources. The unlimited supply of efficient labor in the Orient is proving a great attraction to manufacturers. Canadian and American business men, realizing the possibilities, are opening branch houses and plants in ever-increasing numbers.

The greater interest being taken in the Orient is illustrated by the steamship traffic. During the year ending June 30, 1921, the Canadian Pacific carried 9,671 first-class, 1,854 second and 23,940 steerage passengers across the Pacific, as compared with 2,514 first-class, 1,028 second and 11,033 steerage for the year ending June 30, 1914. Shortly after travel to Europe had been stopped by the world war, the Canadian Pacific, realizing that the tourist would naturally turn to the Pacific, sent a representative to the Orient to place its passenger organization on a parity with that in Canada, and also to study conditions with a view to stimulating travel. At that time, the Imperial Government Railways of Japan, although built on narrow gauge, were in good physical condition, with modern equipment, including sleeping, dining and parlor cars. Travellers experienced no trouble in visiting the various points of interest throughout Japan, as there were English-speaking employees on all trains and at the important stations. There were, however, no through ticketing arrangements to points in China. Experience has shown that travel is greatly encouraged by eliminating the necessity of buying tickets at different points en route, and the plan recommended was to link up existing routes by through-ticketing facilities.

From Japan to Korea there was an excellent steamship service between Shimonoseki and Fusan. The South Manchurian Railway from Fusan to Seoul and Antung and the Chinese Government Railways were standard gauge throughout. Each Chinese railway had different style rolling stock and power, one being equipped with American engines and cars, the other with English, German and French. The Chinese Government Railway trains carried large numbers of third-class passengers, but very few first-class, while sleepers and diners were run at a heavy loss. The traffic departments of the Imperial Government Railways of Japan and the Chinese Government Railways agreed to grant the Canadian Pacific the privilege of printing and selling through railway tickets, in connection with its Ocean tickets to the Orient. The Japanese Officials were keen on securing tourist travel. They realized that they must do everything within their power to make the visits of tourists as pleasant as possible and provide opportunities for covering the points of interest with the greatest comfort and in the shortest possible time.

Japan-China Overland Tour

The Chinese Traffic Officials realized that China needed money; indeed was negotiating for a loan in the United States at that time. It was suggested that instead of sending Chinese Government Officials to New York to negotiate the loan, the New York financiers should be brought to China in order to obtain first-hand information as to the resources of the country. Furthermore, they agreed that first-class travel was needed to increase the earnings of the sleeping and dining cars. Through this co-operation of Japanese and Chinese railways, the Japan-China Overland Tour was launched. It took almost a year to arrange the details and print the contract, which was entered into by the six important railways of Japan and China and the Canadian Pacific Railway. The agreement provided for the issuance of first-class tickets from Yokohama to Shimonoseki, Fusan, Seoul, Mukden, Peking, Tientsin, Nanking and Shanghai, with stop-over privileges and free checking of baggage. Trans-Pacific travel was at once given an impetus and has increased steadily. The through-ticketing scheme has since been adopted by the Japanese and Chinese railways for other tours, and first-class Overland travel has developed to such an extent that it has been necessary to add additional sleeping cars to their trains.

The Imperial Government Railways of Japan have sent a number of the heads of the various departments to

Canada to study the Canadian Pacific system, and the Chinese Minister of Communications this year asked for the privilege of sending six of their brightest railway men to Canada to study the business methods of the railway which has done so much for the development of travel to and through China. These young men are here now. The trans-Pacific travel developed so rapidly that the Canadian Pacific found it necessary to increase the first-class carrying capacity of the "Empress of Asia" and "Empress of Russia" from 296 to 377, and an order was given to the builders for the construction of the "Empress of Canada" which will be the largest and most luxurious steamship in the trans-Pacific trade. The fleet has been further augmented by the purchase of the "Empress of Australia". These ships should both be in service about May 1, 1922, and the Canadian Pacific will then operate a fortnightly service with the four large passenger ships from Vancouver to Yokohama, Kobe, Shanghai, Manila, and Hong Kong.

Canadians abroad are great advertisers. While they do not always appreciate the wonderful resources and advantages of their country when living in it, they certainly do as soon as they take up residence in a foreign country. The Canadians residing in the Orient, whether in business, missionary work or Y. M. C. A., are continually singing the praises of Canada and are a great factor in diverting travel to and through this country. They have also urged the educational institutions to make it possible for Chinese students to come here to pursue their studies and familiarize themselves with modern business methods.

In 1914, the hotels throughout the Orient were able to take care of all traffic, but as the business developed from year to year, it has been found necessary to increase the hotel accommodation materially to take care of the tourist travel. The capacity of the Grand Hotel at Yokohama has been doubled. At Tokio, the new Imperial Hotel is to be completed about the end of the year. Other small hotels are being opened at various places in Japan. At Shanghai, an immense hotel is being planned. At Hong Kong, the Repulse Bay Hotel has been built, and a large new hotel is also in course of construction at Kowloon.

Increase in General Traffic

The growth of passenger travel to and from the Orient is paralleled by the freight activities. Despite worldwide depression, an aftermath of the war, freight activities of the Canadian Pacific Steamships on the Pacific indicate satisfactory progress in the development of Canada's trade with the Orient. During the twelve months ending December 31, 1921, the Canadian Pacific had twenty-three sailings from Vancouver, carrying 60,224 deadweight tons of cargo, equivalent to 70,826 measurement tons of 40 cubic feet. In comparison with this, in 1913 there were the same number of sailings with 43,452 deadweight tons, equivalent to 61,059 measurement tons of 40 cubic feet; an increase of 16,772 deadweight tons or 9,767 measurement tons.

The imports from the Orient for 1921 were 70,759 tons, with twenty-three sailings, as against 69,600 tons in 1913, with the same number of sailings. The showing of 1921 is the more remarkable from the fact that competition was never so keen on the Pacific as to-day; while the route, via the Panama Canal, which was only opened a short time before the war, has developed an entire change in the means of communication between the American Continent and the Orient. The exports from Canada consisted chiefly of lumber, fish, flour, asbestos, pulp, lead and spelter, which will be noted comprise largely our natural products of agriculture, the mines and the fisheries. The volume of manufactured merchandise is comparatively small and suggests the opening of a vast field of endeavor for Canada as a market for her industries. In this particular, reference is had to China, which consumes large quantities of textiles, metals, machinery, hardware and numerous other articles now supplied from Europe and the United States.

The Canadian manufacturer looking for export would be wise to pay a visit to the East, as only by personal

contact can he see and appreciate the possibilities of trade. The conservatism of the Chinese is well known, but once having established business relations he can be trusted to maintain and develop a line of trade with loyalty and persistency. China, with a population of between three and four hundred million people, is essentially agricultural. With this population, there are approximately only 6,000 miles of railway as against 40,000 miles in Canada with a population of nine million. Aside from the railways, China has large navigable rivers and a wonderful system of canals, which are the principal means of long-distance communication. The development of foreign trade with China has been very slow, and while the political situation at the present time is unsatisfactory, progress is amply evident. A marked improvement in China's relations with the world may be confidently expected from the Conference now sitting at Washington. If China is given an opportunity to develop unhampered by the adverse conditions which have prevailed in the past, a great new market will be opened up. Canada is in a particularly fortunate position to take advantage of this new field. The feeling of the Chinese towards Canada is friendly, and this in no small measure is due to the reputation which the Canadian Pacific has established and maintained for many years through its Pacific fleet.

Japanese Industrial Development

The market for Canadian goods in Japan differs somewhat from that in China. The industrial development of Japan has been nothing short of wonderful in the last quarter of a century, and this growth took on an impetus during the war, until to-day Japan ranks as one of the foremost manufacturing countries in the world. The market in Japan for Canadian products is therefore largely restricted to such commodities as lumber, fish, grain, flour, woodpulp, paper, lead and spelter, but there is the possibility of development in other lines of Canadian manufactured goods. A movement of wheat in bags to Japan commenced some time ago, and is increasing year by year. It is anticipated that before long Canadian grain will be handled through Vancouver to Japan in bulk. The demand for wheat has come about through the establishment of flour mills; flour, as time goes on, displacing rice, millet and other articles of food.

Imports from the Orient consist mainly of tea, silk, spices, Chinese provisions, porcelain, toys, curios, etc. The market for such goods is largely in Eastern Canada and the United States, and while the competition of the all-water routes via Panama and Suez Canal is a strong factor in diverting traffic from the Pacific, it is a tribute to the efficiency of the Canadian Pacific service, with its high class of ships—the finest and fastest in the Pacific trade—that the considerable volume of the trade has been retained for the trans-Pacific and trans-Continental route.

A special feature of the new ships "Empress of Canada" and "Empress of Australia," which will be in service next year, is provision for the carriage of perishable goods, such as butter, cheese, and apples. The "Empress of Canada" has 20,350 cubic feet of space and the "Empress of Australia" will have similar accommodation. This should prove a decided advantage to Canadian shippers.

At the close of the war Siberia gave promise of interchange of trade with Canada, and for a time business of considerable volume was done through the port of Vladivostok. The political and economic conditions in Siberia, involved with the collapse of Russia, have since brought about practically an entire cessation of business. It is hoped that some time in the not too distant future trade between Canada and Siberia may be resumed, but it is questionable if this can ever reach any considerable volume from the fact that the two countries have similarities in climate and resources.

Canada's Industrial Growth

As Canadian agricultural development is largely based on immigration so does the importance of Canada's industry increase with greater farming production and a swelling domestic consumption. Canadian agricultural and

industrial progress have always gone hand in hand. Consistent annual increments in the value of agricultural products have been reflected in proportional increases in industrial output. The strength of the incoming human tide is found to correspond largely with the volume of the influx of foreign capital to finance new enterprises.

For years Canada has had a healthy immigration. For the same long period of time her agricultural production has increased by leaps and bounds. Similarly the manufacturing industry has become yearly more and more important in the Dominion's national life, and at the present time Canada is fast reaching a state where she will be in a position to manufacture practically her entire needs. Foreign manufacturers are coming, in an ever-increasing extent, to realize the wisdom of manufacturing in Canada and the establishment of new plants steadily continues.

Steadily Increasing Statistics

The industrial statistics for the year 1919 have just been issued by the Dominion Bureau of Statistics and indicate a healthy increase in all lines over the previous year. In the course of the twelve months the number of manufacturing plants in the Dominion increased from 35,797 to 38,344 or more than eight per cent. The amount of industrial capital invested rose in the same period from \$3,034,801,915 to \$3,230,686,368 or by more than \$195,000,000. Employees grew from 678,337 in one year to 681,500 and the wages and salaries they received from \$629,860,644 to \$689,434,419. In 1918 the value of the annual production was \$3,458,036,975; in 1919 it was \$3,520,724,039, an increase of nearly \$60,000,000.

The history of industry in Canada is one of progress consistently maintained. In 1870, when the first industrial census was taken, there was in the Dominion, as it existed at that time, a capital of \$77,964,020 invested in industry. A total of 187,942 employees were paid \$40,851,009 and accounted for a production in that year of \$221,617,773. In the less than fifty years which have elapsed since that and the last census, the capital invested has increased by more than four thousand per cent. and the annual production by nearly fifteen hundred per cent.

Invested Capital Increases 114%

Ten years later the value of invested capital had risen to \$164,957,423 and production to \$309,731,867. In 1880 there were 49,722 industrial establishments in Canada. Ten years later, in 1890, there were 75,964 establishments, the amount of industrial capital invested was \$353,213,000 and the annual value of production \$469,847,886. The increase in capital in this decade amounted to 114 per cent. and production 52 per cent.

A new system of taking statistics was adopted in the next decade, only those with five hands or over being noted, and consequently, in 1900, 14,650 establishments were returned with a capital of \$446,916,487, and a production of \$481,053,375. From 1900 to 1915 the increase in the number of establishments was 6.4; the increase in industrial capitalization 338.3; and in the value of products 187.2. Between 1915 and 1919 there was an increase in the number of establishments amounting to 145 per cent., an increase in the capitalization of nearly 65 per cent., and a growth in annual production of more than 155 per cent.

The 1919 figures do not by any means represent the present status of manufacturing industry in Canada and generous allowance must be made for expansion in the past two years. This has been a period of great industrial development and the introduction of substantial capital by foreign investors realizing their advantages in manufacturing in the Dominion and establishing there. The 1920 and 1921 statistics, when published, will show a continuance of the same consistent progress maintained since Confederation.

Canadian Trade, 1921

By C. W. Cates, Ottawa

The total value of Canada's external trade for 1921 was \$1,616,087,879; as compared with a total trade of

\$2,600,000,000 for 1920. Exports amounted to \$816,694,281 and imports to \$802,699,820. The falling off to the extent of a round billion within the twelve months is easily the most notable change in the trade annals of the country. That this remarkable recession has been attended with no more bad effects than have been experienced, speaks much for the recuperative power of Canadian business.

A decrease of \$1,000,000,000, however, in Canada's external trade does not mean a corresponding reduction in the volume of business done. As a matter of fact the reduction is more apparent than real, and is due chiefly to the marked fall in prices during the year. As a matter of fact exports of grain have been larger than during 1920. Still, on the whole, it would be foolish to deny that less business has been done than during the preceding year, the point of chief consideration being that the loss in volume has not been as great as that represented by the much smaller figures.

The most marked development of the trade of the year was the decline in the value of operations with the United States. In 1920 the total value of this trade was \$1,512,000,000; in 1921 there was a drop to approximately \$930,000,000. Imports from the United States suffered most; in 1920 they were \$921,625,000, whereas in 1921 they were approximately \$574,000,000. Exports suffered greatly through the incoming of the "emergency" tariff, their value having fallen from \$590,000,000 in 1920 to approximately \$356,000,000 in 1921. It may be taken for granted that the decrease in imports was to some extent due to inability to sell as freely as formerly in the United States, still due allowance must be made for the decline in purchasing power through the business depression.

Trade Now Better Balanced

At the end of the year trade with the United States is found to be in a much sounder and better balanced condition than it was at the end of 1920. At that time the balance of trade against this country in favor of the United States was \$347,000,000; on the operations of 1921 it was only about \$230,000,000. The improved situation is reflected in the premium on New York funds, which at this writing is around 5 per cent., as compared with 19 at the end of 1920. This probably will have the effect of stimulating imports again from the United States, for the inclination to import therefrom will increase in proportion as the purchasing power of the Canadian dollar increases over there. On the other hand, there is no indication that the value of exports to the Republic will be appreciably increased during the near future. How deeply the "emergency" tariff has cut into them may be seen in the fact that the value of exports to the United States during the eight months ending November was but \$198,000,000 as compared with \$381,000,000 for the preceding period.

Imports from the United Kingdom have declined very greatly during the year; that is from \$231,479,000 for 1920 to \$123,000,000, or equal to 47 per cent. While there naturally would be a marked falling off, owing to the decline in purchasing power, still owing to the advantage that the British preference and the rate of exchange, it is rather surprising that the decline has been so great. On the other hand the value of exports to the United Kingdom has held up remarkably well, having been approximately \$312,000,000 for the year, or a decrease of only \$31,000,000 as compared with the 1920 figures. As there has been a very great fall in the value of these exports, their volume has really been much increased. It is quite probable that during 1922, the United Kingdom will again become Canada's best customer.

Trade with other Countries

Reduced figures were also the feature in the case of trade with countries other than the United Kingdom and the United States. Exports to Newfoundland were approximately \$7,000,000 less, other reductions being: Belgium, approximately \$25,000,000; France, \$21,000,000; Greece, \$22,000,000; Italy, \$15,000,000; British South Africa, \$7,500,000. Exports to Roumania dropped from over \$12,-

000,000 to about \$40,000, because there were no more credits. Germany, however, somewhat increased her purchases during the year.

The lower level of prices and the reduced demand for many commodities considered as luxuries is also evident in the import figures. During the year ending November 30th, imports from the British East Indies were \$11,000,000 below those for the preceding period. Other decreases were: France from \$20,480,000 to \$13,497,000; Japan from \$14,644,000 to \$7,889,000; Switzerland, \$15,481,000 to \$9,530,000. The drop in sugar prices is to be seen in the reduction in the value of imports from the British West Indies by \$7,000,000, and in those from Cuba by \$19,000,000. On the other hand, imports from British Guiana jumped from \$5,802,000 in 1920 to \$11,830,000 in 1921, due probably to the increased preference on sugar.

While there has been a marked decrease in the value of Canada's external trade during the year, it has not been as great as in the case of the United States; in the export trade especially, Canada has shown up better, and that in spite of the fact that her exports have been very seriously affected by United States tariff legislation.

Industrial Alberta

Alberta takes sixth place amongst the provinces of Canada in order of industrial importance, which is significant of a creditable development, when it is considered that the Province of Alberta was created only in 1905, and that its progress has been directed almost entirely along agricultural lines to which it is exceptionally adapted. The remarkable increase in agricultural production has however seen a corresponding growth in industrial manufacturing as new plants have sprung up to meet the needs of the farmers. As there remains little doubt but that the future agricultural development of the province will be on at least as substantial a scale as in the past, and that industrial establishment must keep pace with this expansion, there exist in Alberta to-day, industrial opportunities which are both encouraging and inviting.

When the last census was taken in 1918, Alberta had 1,252 industrial establishments capitalized at \$61,405,933 employing 9,894 persons with wages and salaries totalling \$10,249,465, and accounting for an annual production of \$82,434,422. In the year 1900 the provinces of Saskatchewan and Alberta combined had only 105 establishments with \$1,689,870 capital, 1,168 employees and a production of \$1,964,987. The rapid growth of Alberta industry since that time is recorded in the quinquennial census of 1910 and 1915. The number of establishments were respectively 97, 290 and 282. The capitalization \$5,400,371, \$29,518,346 and \$41,198,897. The annual production \$4,979,932, \$18,788,825 and \$29,416,221.

Though Alberta has made such rapid progress in the past in industrial development, she nevertheless remained dependant to a large extent on points outside the province for certain types of manufactured goods, and her larger centres were distributing points for these commodities. Gradually, however, she is departing from this dependance and becoming more and more self-supporting as her own manufactures

develop. Possessing the necessities and facilities for successful manufacture, this is not a difficult matter, granted that the required capital is made available.

The Industrial Centres

The city of Calgary, the commercial capital, has about eighty industrial plants and more than two hundred wholesale firms. It is the trading centre for an immense agricultural and stock-raising district and the chief supply station for the mining district of the Rockies and British Columbia. There is a wide range of opportunity here for the manufacturer wishing to locate, and the city supplies new industries with power, light, heat and industrial sites at cost, and natural gas at fifteen cents per thousand feet to manufacturers. At the 1917 census, Calgary's industries accounted for a capitalization of \$27,584,047 and an output of \$26,342,231, both of which have been substantially increased in the expansion which has taken place since that time.

The same multiplicity of manufacturers and as varied opportunities are to be found in Edmonton, the provincial capital, which is a distributing point for the Peace River country and tremendous north land, and is fast becoming also its manufacturing centre. Edmonton's industrial capital at the 1917 census was \$16,401,548 and its output \$15,039,392. The city here also sells water, light, and power at cost to new industries and has in addition a large area reserved for industrial sites.

Other two Alberta cities which are making a bid for manufacturing eminence and growing yearly in importance in this regard, are Lethbridge and Medicine Hat, each the centre of valuable natural deposits as well as rich agricultural tracts. The coal, grain, livestock alfalfa, hay and wool exports of Lethbridge account yearly for about sixty-five million dollars. The industrial capitalization of this city in 1917 was \$2,697,041, and its output \$2,443,986, whilst that of Medicine Hat was \$6,824,084 and \$11,223,547 respectively.

With continuous settlement and an ever increasing agricultural population, Alberta has need of a proportional industrial expansion to meet its need. Not only has nature provided for this in generously distributing the necessary natural deposits and furnishing water powers and other facilities, but practically all cities and towns offer inducements to manufacturers. There is no question as to the future importance of industry in Alberta; it must inevitably grow with the province's agriculture.

The Growth of Ontario

Ontario is one of the oldest established provinces of Canada, and as such has long settled in her ways and is largely free from the sensational booms or meteoric spurts of development which so often beset newer areas. In many respects the most prosperous province of the Dominion, its progress is of the most substantial nature as

being along the soundest lines with the firmest of bases against economic slumps. There is nothing problematical about Ontario's future; the province has in every sense arrived, and whilst in many lines of natural resource, development cannot be said to be far advanced when one takes cognisance of the tremendous possibilities, it possesses the possibilities at the present time of expanding and extending largely from within itself.

Canada was the early name of the provinces of Quebec and Ontario. In 1791 the territory comprised under the name was divided into Upper and Lower Canada. In 1867 Upper Canada became a province of the newly created Dominion under the name of Ontario. The first settlers of the province were largely refugees, from the United States who, in 1874, came north to the unbroken forests rather than forego their allegiance to the Motherland. The province of Ontario, as it exists at the present time, comprises a total area of 407,262 square miles. It is divided into two great sections, Southern Ontario, the older and more settled portion with an area of roughly 77,000 square miles, and Northern Ontario, where development is in more primary stages and pioneer conditions to an extent prevail, accounting for the much larger total of 330,000 square miles.

Canada's Industrial Centre

Whilst the origin of Ontario's growth and prosperity was in agriculture and this industry is still of prime importance, the province has forged particularly ahead in other phases of activity and achieved for itself first place amongst the industrial sections of the Dominion. Agriculture though largely stabilized still makes very satisfactory progress. Whilst in 1911 the agricultural production of the province was valued at about \$305,000,000, in 1920 it was worth nearly \$376,000,000. There are about 175,000 farms in the province.

Ontario has also become the first mineral province of Canada, leading all other areas in annual production. As yet her wide variety of minerals are only partially developed and capable of considerable expansion, and this is being accomplished substantially each year. In the year 1900 the province's mineral production was worth \$10,417,576, accounting for 21.73 of the entire Dominion production. In the following decade this increased to \$49,727,400 and the proportion of the Dominion total increased to 40.76 per cent. By 1920 the annual production had increased to \$78,749,178, but owing to the development of other areas this accounted for a little less in Canadian production or 36.16 per cent. A phenomenal feature of the province's mineral development of recent years has been the growth of the Northern Ontario gold fields. In 1921 these were producing at the rate of \$19,008,000 per annum whereas in 1920 the entire Canadian production of gold was only \$15,853,478.

Extensive Inland Fisheries

In its inland waters, particularly its share of the Great Lakes, Ontario possesses an extensive fishing field which gives it fourth place among the provinces of the Dominion in the fishing industry. Its production of whitefish, herring, trout, pickerel, perch and pike is increasing consistently every year in value as illustrated in a comparison of the figures of the past two decades. In 1901 the value of Ontario's annual catch was \$1,424,078; by 1910 this had risen to \$2,348,270, whilst in 1920 the freshwater fish of the province accounted for a revenue of \$3,336,412.

Ontario's forests constitute one of its most valuable resources which at an early period in its history induced the introduction of capital and exploitation. The total area of forest land is estimated at 260,000 square miles and that covered by timber licenses and other rights, 40,000 square miles. Northern Ontario contains vast supplies of timber upon which commercial cutting has hardly commenced, whilst this region is also estimated to have 200,000,000 cords of pulpwood. The manner in which the timber industry of the province has expanded in the past decade, due to a great extent to the development of the pulp and paper industry, can be seen in a comparison of the 1910

figures with those of 1920. Whereas in the former year the value of forest products from the province was about eleven million dollars, it had risen in the latter to nearly forty-eight million dollars. In the pulp and paper industry, in which this province takes second place only to Quebec, the same surprising development is found. Pulpwood used in the industry in 1910 was 210,552 cords, in 1919 it was 840,856; in the same period the value had increased from \$1,479,538 to \$13,113,794. The amount of pulp produced in the province increased in less than a decade from 156,076 tons to 597,291 tons, the number of plants manufacturing jumping from fifteen to twenty-two.

A Great Central Market

Industrially Ontario has made titanic strides, and with the rise of the newer Western Provinces to agricultural renown has taken full advantage of its unique situation and extensive assets to make a bid for fame as the manufacturing hub of the Dominion, and to supply not only its own needs but those of the enormous agricultural territory west of the Great Lakes. The industrial expansion of the province of Ontario is pithily summed up in the following comparative tables constituting a survey of the past twenty years.

	1900	1910	1918
ESTABLISHMENTS.....	6,543	8,001	15,465
CAPITAL.....	\$214,972,275	\$595,394,608	\$1,508,011,435
EMPLOYEES..	161,757	238,817	333,936
WAGES.....	\$56,548,286	\$117,645,784	\$320,740,215
PRODUCTION.	\$241,533,486	\$579,810,225	\$1,809,067,001

Such is the diversity of provincial activity and the overshadowing effect of the industrial phases that the fur trade is often lost sight of as an Ontario asset. Attention is directed so generally to the Northwest Territories as the prolific producer of pelts, that it comes somewhat as a surprise that Ontario leads amongst the provinces of the Dominion in fur production. The great vasts stretching up from Northern Ontario to Hudson Bay discharge a peltry which is prime in both quality and quantity. How revenue to the province from this source has increased of late years is illustrated in the added value of the catch from a mere \$297,101 in 1910 to \$3,414,917 in 1920.

Population of Three Millions

The population of the province of Ontario in 1901 was 2,182,947; in 1911 it was 2,523,208; whilst the returns of the census just completed are expected to give it a population near the three million mark. The province has three cities over the hundred thousand mark in point of population, Toronto, Hamilton, and Ottawa; one between fifty and a hundred thousand, London; two between twenty-five and fifty thousand, Brantford and Windsor; and sixteen between ten and twenty-five thousand. Urban growth is typified in that of the capital city of Toronto, the second city of the Dominion. With a population of 267,730 in 1901, it had added more than two hundred thousand to its inhabitants by 1911 when a population of 470,480 was returned. Its latest estimate of population gives it 535,000. When completed, Toronto will have the finest harbor on the Great Lakes, an asset of incalculable value. The cost of the development scheme, including work donated by the Dominion government, is \$37,000,000.

This brief survey indicates the versatility of commercial activity in the province of Ontario and the consistent progress achieved in every phase of endeavor in the past decade. Ontario has been generously treated in the matter of natural gifts, being richly endowed in agricultural land, minerals, forests, furs, fisheries and in the water powers and other advantages which make for industrial expansion. Though her progress has been gratifying in the past and imparts a sense of satisfaction in what has been accomplished, her natural possessions are yet capable of much greater development, and this there is every expectation of coming to pass in the decade before it.

United States Interest in Canada

It is gratifying to note that The Northwestern Banker, a monthly journal published at Des Moines, Iowa, now in its twenty-sixth year, has, in its December issue, opened a department to encourage a greater knowledge and better understanding of Western Canada by bankers of the American Middle West. In writing to advise us of this departure, the publisher says:—

"To serve the need which The Northwestern Banker knows exists among Western bankers for accurate information about Canadian conditions, more particularly Western Canadian conditions, The Northwestern Banker has decided to start a Canadian Department. The object of this department will be to provide the information about Canada which will enable the readers of this journal to answer quickly and completely any questions which may come to us. This is done from no mere academic desire to spread information of an interesting character, but is the result of a very clear perception of the many ways in which the interests of the two countries are interlocked."

An editorial in the December issue, above referred to, says in part:

While it needed the war to establish the close contact that at present exists between Canada and the Eastern United States, it needed no such influence to awaken Western American interest in the development and progress of the Dominion of Canada. For in a way Western Canada, at least in spirit and outlook, may be said to be almost a part of the great American West.

In spite of the imaginary line that from the Great Lakes West divides the Dominion of Canada from the United States, one finds it difficult at times when traveling in the west to tell where Canada begins and the United States ends. Physically the two countries, or that portion of them which lies along the international line, are much the same. The respective peoples of the Canadian West and the American West have many qualities and vast interests in common. In the growing cities of the Canadian West one finds that bounding optimism, that belief in the infinite possibilities of the future, that has come to be recognized as so characteristically American. In the rural districts of both countries one finds the same type of men, men who might be transplanted from one side of the line to the other without anyone being aware of their place of origin. And it is not surprising that this should be so.

Have Much in Common

But even geographical proximity and great freedom of intercourse does not account entirely for the similarity which exists between the outlook of the people of Western Canada and the people of the American West. If there be one fact more than any other which accounts for this similarity of outlook it is the fact that both have one great industry and interest in common, agriculture. The American West and the Canadian West in no small portion to-day are the food providers of the world. A common occupation always produces a community of interests. And this is true in the case of the Western parts of both Canada and the United States, even if, to a degree, they are rivals in the markets of the world. Having a common aim and being rivals in achieving that aim, it is obviously important that each should know as much about the affairs of the other as is humanly possible.

That Western Canadians follow closely the course of events in the American West, is a fact that is obvious even to one whose contact with the Canadian West is confined to the reading of Western Canadian newspapers. To the

Western Canadian, the Western United States are at once an inspiration and a school. He hopes that the day will come when his country, like the American West, will be dotted with prosperous cities, and that this will be brought about by the same courage and the same trust in the future that made the American West what it is.

Offer Reliable Canadian Information

But does the Western American take the same interest in Western Canada? Does the Western banker who is perhaps asked by a farmer customer whether it is wise for him to consider pulling up stakes and going north always feel able to base his advice on an intimate knowledge of Canadian conditions? Can he tell his farmer customers, for instance, how the crops are getting along in Canada or how the Canadian Government is helping the Canadian farmers out of the difficulties which they, like their American cousins to the South, face to-day? Can he tell them what has been the real effect of the imposition of the Emergency Tariff upon Canada's exports of foodstuffs to the United States? Does he know whether the Canadian graingrowers tried out selling their grain co-operatively and what has been their success?

The banker is to-day the man to whom a greater number of people both in country and in city look for information—accurate, up-to-date information. His function in the community is not adequately performed unless he is prepared to give that information.

Outlook in Western Canada

*By John F. Sweeting, Industrial Agent,
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Strenuous efforts appear to have been made during the first month of this year to assist in stabilizing conditions, getting stocks sold off and bringing prices to a point where a satisfactory return can be had on new goods. There have been many and large sacrifices, but it has been realized that such methods were the only ones by which some effort towards rehabilitation could be hoped for. While the present situation may be classified as tentative as to which way the "flop" will be, the signs are really for progressive carrying on, and the writer is impressed with the idea that more optimistic views are justified and that prospects for a fair average year's business can be confidently looked forward to.

There are some definite proposals in hand for new construction work, such as the new paper mill at Port Arthur and pulp and paper mills at Kenora, and the construction of a 10,000 ton freight boat at the Lake Ports; work on the Winnipeg power plant—possible pulp and paper mill for the Winnipeg district—additions to terminal and prospects for new grain elevators. Many tenders called for in the last few years are likely to be re-opened and new figures submitted to take care of storage and warehouse requirements.

More residences will have to be constructed and a continuance of the various housing schemes appears likely. New crushing mills and mining works are due for erection on the coast and the mining industry appears to be on the upward grade, with many new proposals under investigation for prospecting and development.

A distinctive campaign is to be carried on in Alberta to foster the dairying industry and in-

crease output of butter, cheese, etc., while irrigation projects will continue construction with possibilities of new schemes being undertaken. In Saskatchewan, as in the other Prairie Provinces, the local governments are devoting more time and attention to putting the agricultural industry on a firm basis by encouraging mixed and better farming, developing scientific methods of production and marketing, and making greater efforts to see that incoming settlers are properly located under conditions that will bring about successful results.

Research Work Indicates Variety Resources

It is somewhat early to state what expenditures are likely to be made on municipal and other works, but a considerable sum of money is slated to be spent on road improvements, telephone extensions and other public improvements. There is much work of this class to be done in the West and some part of it will fall to this year's share.

Research work is being carried on in the West looking to the discovery of new natural resources, appraising the value of known resources with a view to possible commercial development. The oil drilling campaign is likely to continue and prospects for further work on the sodium sulphate lakes appear probable. It is a noticeable factor in western commercial life that there is to day an increasing variety of resources under consideration for commercial development, the existence of which was not even known a few years ago. It is a factor which points to a larger measure of wealth, a greater variety of products and possible absorption of a greater number of workers in industries of a permanent nature within the next few years. It is satisfactory to note that resources are being opened up, investigated and dealt with on scientific lines, without suggestion of boom, and in such a way that when capital is available, they can be developed with average prospects of success.

It is, however, at the moment a little difficult to formulate plans for the year. With the coming of spring and a better understanding of immigration plans and a better financial outlook, there will be greater opportunity for judging the year's prospects; in the meantime, the existing effort to get business matters on a more stable basis will be continued with undoubtedly promising results.

Supremacy in Furs

All accounts from the Canadian Northland are to the effect that furs are pouring into the trading centres at a very heavy rate, and the season's catch bids fair to eclipse the very satisfactory one of a year ago. The pelts are stated to be of excellent and exceptional quality, and with a continuance of the higher prices which prevailed at the fall sales the aggregate of peltry

will be a very valuable one. Thus does Canada's annual fur harvest continue to constitute one of the Dominion's wealthiest natural resources, in spite of the fact that agricultural settlement is annually making greater penetration into the fastnesses of the North, and each year sees new territory wrested from the denizens of the wild and brought under the plough to be rendered yet further productive.

The fur trade constitutes Canada's oldest industry, the trapping of the wild animals and the exploitation of their pelts first attracting men to what was then an unknown and forbidding land. Though other phases of activity have since outstripped it in importance, Canada still remains pre-eminently the first fur country of the world as a producer of raw pelts. In spite of this priority of establishment, statistics on the Canadian fur industry are remarkably indefinite, and on account of the exceeding difficulty in securing accurate returns it is almost impossible to determine, even approximately, what the fur trade is worth to the Dominion.

Canada's main source of supply is still the trapper, who goes out with his line of traps each winter and remains in the wilds until the coming of spring puts an end to his chase. Last season over three million pelts were secured by trappers which returned a revenue of more than twenty million dollars. In certain years, the harvest exceeds this by a considerable amount, and this year the catch will undoubtedly be substantially greater. The only method of computing these pelts is through the records of accredited fur and trading houses, and record is not taken of those which might be disposed of in other manners by farmers and others casually engaging in independent trapping.

Domestic Ranching of Wild Animals

The other contributing factor to Canada's annual fur wealth, which is only commencing its career of influence but which has immense potentialities ahead of it, is the domestic ranching of wild animals. The time must undoubtedly come when the northern wilds will be depleted to such an extent that other sources must be looked to to provide the amount of furs which Canada is accustomed to give the world. Farms for the domestic rearing of foxes and other wild fur-bearers are preparing for this. There were 16,529 of these in existence last year, and from them were sold 2,401 live animals valued at \$763,221, and 2,740 pelts worth \$388,335, so that Canadian fur farms in that year added \$1,151,556 to Canada's fur revenue. Taking into account the amount of furs which go unrecorded, and the returns from accredited fur trading houses, twenty-five million dollars is not too pretentious a figure at which to place Canada's fur production, which gives it a fair place among Canada's industries of the present day.

The domestic ranching of wild animals in Canada is only in reality in its initial stages and is anticipating the time when agricultural settlement will have to such a serious extent depleted the wild catch, that greater recourse will have to be made to this source. The number of farms are continually being added to and the industry is making substantial strides. In the past few months a fox farm was established at Medicine Hat, Alberta, with \$50,000 capitalization; one was established at Sackville, New Brunswick, under similar capitalization; one at Salisbury, New Brunswick, had \$100,000 worth of stock; and important farms were also located at Winnipeg, Manitoba, and Newboro, Ontario, as well as at least one in British Columbia.

As Canada's reputation for raw pelts has always been unassailable, so is she achieving a like renown for the product of her domestic ranches, which is in universal demand. From Prince Edward Island alone in the past year, live foxes were shipped to the United States, England, Japan, Switzerland, Russia and Norway. Ranches in other parts of Canada are doing the same. Recently, a consignment of three hundred foxes left Prince Edward Island for points in the United States, and about the same time a New Brunswick ranch shipped one hundred to New York State.

As a fur producer Canada has no rival. Her climate and general conditions combine to produce a peltry of a size, a richness, and a glossiness which are unexcelled. Her wild fur catch still occupies the first place in world supply, and against its inevitable diminution she is preparing further resources of the same desirable qualities.

Across Canada—Charlottetown

There is perhaps no more tranquil or charming countryside in Canada than that of Prince Edward Island.

Few cities are there which combine a wealth of intrinsic beauty with economic importance to such an extent as does Charlottetown, the little island's commercial metropolis and provincial capital. Beautifully situated at the confluence of three rivers, overlooking the Atlantic from the security of a magnificent harbor, and set in entrancing scenery with an old fort at hand to remind it of its place in early Canadian history, it is richly and variously endowed. Founded in 1768, the city has the distinction of being the "Cradle of Confederation," for here was held in 1864, the first conference called to discuss the union of the Maritime Provinces, and out of which grew the greater union of all the provinces in Canada.

Charlottetown is well laid out with main streets of generous width, large public squares, fine parks and handsome public and commercial buildings. There are eight banks; St. Dunstan's cathedral is claimed to be the finest edifice of its kind east of Montreal. The educational

establishments are also creditable, there being a government institution of general academic training, a university affiliated with Laval at Montreal, provincial, technical and agricultural schools, a number of public schools, a convent and business college. Pre-eminently is it a city of beautiful homes.

Charlottetown is centrally situated in the midst of a rich agricultural country which has been settled for many years and whose farmers have attained considerable prosperity. Geographically it is the centre of the province and has become the collecting point for exports and the distributor of imports. It has a fine harbor, landlocked on three sides, and maintains steamship services to Pictou, Nova Scotia, the Sydneys in the same province, to Montreal and the island of Newfoundland. Large quantities of agricultural produce leave the island, whilst its fame in the farming of silver foxes, which have gone all over the world as breeding stock, needs no elaboration.

Considerable Manufacturing

The city has a number of staple and vigorous industries including an iron foundry and machine shop, manufacturing gasoline engines and other articles, a condensed milk factory, four pork-packing and cold storage plants, electric light and power plant, four sash and door factories, two modern flour and feed mills, several can making establishments, two large ice-cream plants, broom factory, book binding, fox biscuit manufactory, marble works and others. Among the opportunities existing for location are fruit farming, especially strawberries, oyster culture, market gardening, rolled oats mill, manufacturing peat fuel and glass from glass sand found near, vegetable and fruit canning, boots, woollens, soap, and agricultural implements.

With an ideal summer climate, exquisite scenery, and the possibilities of various kinds of holiday making, Charlottetown is each year the Mecca of thousands of tourists attracted by the peculiar charm the little island possesses. Splendid stretches of sandy beaches afford the finest of bathing. There are enjoyable boat excursions daily in the summer and facilities for sports of every kind.

Charlottetown makes little bid for publicity, resting calmly satisfied in the assurance of its irresistible appeal to those who know it and are lured back each year to holiday in its delightful surroundings. In the past decade it has increased its population by 1,147, harboring now some 12,350 souls.

As the capital in every respect of one of Canada's oldest provinces, Charlottetown will always be an important centre, growing doubtless in commercial importance whilst maintaining her renown for beauty unexcelled.

The Army Comes to Canada

The termination of the Great War and the consequent demobilization was attended by a determination on the part of a great many constituting the armies to get away from the civil pursuits they had followed previous to donning uniform. To many the realization was brought home that they had been square pegs in round holes pursuing trades and professions to which they were little adapted and for which they had no love or zest. Still others who had all their lives been satisfied with their various callings viewed the prospect of returning to them with a great deal of dissatisfaction and often in positive distaste. The years of warfare which had perforce altered the current of their lives, had revolutionized preconceived ideas, shattered that calm settled outlook on life, and created a new viewpoint. Many men wanted something different, something essentially a man's work.

Amid all the horrors and hardships of war one discovery was made, dawning upon the minds of many men in its full force for the first time. This was the real and positive joy of the out o' door life, that existence which compels a man to spend the greater part of his time in the great open at first grips with nature. Men, learning the pleasure of it, began to imagine what such a life might hold for them when the restrictions, the rigors and the inconveniences of army life were removed, and the daily round not fraught with the same dangers and risks. The prospect loomed up brighter and more desirable in contrast to the very antithesis they were living.

And so it happened that when demobilization came many men thought of agriculture and the possibilities it offered, and some governments, anticipating this trend on the part of demobilized soldiers, prepared schemes for assisting them in their desires. When it came to finding a bourn for these hopes, Canada, with her many advantages and her vacant stretches of virgin agricultural land, was easily the favorite. The demobilized soldiers of many nations began to come to the Dominion, and since that time there has been a steady trek of the warriors of the Great War. From Brigadier-General to private they are to be found on Canadian farms, and their number is being added to every day. They have settled in every manner and system, in large and small colonies, in small partnerships, and individually, and almost without exception they are making good on Canadian soil. Apparently there can be no doubt as to the content and happiness they have found on Canadian farm lands.

Loans Amounting to \$86,500,000

Of an aggregate of 273,444 members of the Canadian army in France when, shortly after the Armistice, a consensus was taken, 53,890 expressed a desire for a change from their pre-war employment. This represented 19.7 per cent. of the active forces at that period. There were 187,771 men who desired to engage in agriculture, whereas of these only 172,218 had previous to enlisting, been so employed. Only 4,175 men who had previously been farmers wished to leave the farm and pursue other callings.

Legislation by the Canadian government gave the Canadian soldier, by reason of his service, the right to file on a homestead of 160 acres of Crown land in addition to his civilian right to the same extent. It instituted the Soldier Settlement Board to train soldiers as farmers and when qualified assist them in purchasing land and making a commencement with loans. It opened Indian reserves and large leases for soldier entry and reserved for soldier entry solely Crown lands within fifteen miles of a railroad. Furthermore, soldier land seekers were assisted by special railway transportation rates in their land hunts.

It is not possible to record figures of the ex-soldiers who have exercised their soldier and civilian right to homesteads and commenced farming without further assistance, but they are numerous and are to be found scattered all over the Western Provinces. The latest returns show that a total of 27,142 returned Canadian soldiers have been settled on the land by the Soldier Settlement Board, loans amounting to \$86,504,857 being granted to effect this.

Their universal success is exemplified in the fact that whilst these loans cover twenty years in repayment, 423 have already repaid their loans in full.

In land settlement the desire of old comrades to cling together is much in evidence and colony settlement has been general. Three hundred officers and men returning to the Pacific coast for demobilization on the *Empress of Asia* evolved a scheme of co-operative settlement on British Columbia lands which was presented to the provincial government and endorsed by it. Thus came into being the "Empress of Asia" colony on Vancouver Island. Another band of soldier farmers is the Sketchley colony in the Pouce Coupe section of the Grande Prairie area, headed by a veteran of the 31st battalion. With a little band of some thirty veterans and their wives, he led them up to the north country where they took soldier and civilian homesteads and form now a thriving settlement.

Canadian Pacific Railway Colonies

The Canadian Pacific Railway, as a large landowner in the Western Provinces and desirous of doing something in the matter of soldier re-establishment, instituted a scheme for the community settlement of returned soldiers as early as 1916. The plan comprised settlement upon improved farms and selective colonization under which the settler chose his own land and improved it with the assistance of loans from the Company. There are three colonies in Southern Alberta. Two of them, with twenty-five and fifty farms respectively, have farms of eighty acres of irrigated land, while the third colony follows dry farming.

Having ably aided in settling her own warriors as agriculturalists, Canada set about instituting a measure of assistance to the men who had constituted the Imperial overseas army. A selection board of Canadian officials sat in England and were swamped with applications for the free passages and other assistance offered. Those accepted were sent over in groups, and it is estimated that nearly five thousand ex-Imperial soldiers, some with capital amounting to \$50,000, and averaging in possession about \$5,000 apiece, were located on Canadian farms. This settlement of Imperial men is still proceeding, and soon Britain's land army in Canada will constitute many battalions.

The manner in which Canada's ex-warriors flocked to the land was additional encouragement, if this were needed, to the soldiers of other nations eager for land settlement. Many of the men in the Canadian army settled in the United States after demobilization, whilst the various battalions wearing the maple leaf contained men who had been previously United States citizens and returned to their homes after discharge. Numbers of these have since trekked back to Canada to take advantage of the various means of soldier settlement, and they have brought with them many men of the United States army who had undergone the same psychological changes, and did not see the possibility of the fulfilment of their desires in their own country.

Generals and Privates

Ex-soldiers who have settled on farms in Western Canada comprise all ranks civil and military, and formerly followed every manner of calling and profession. From such ranch owners as the Prince of Wales, the Earl of Minto and the Duke of Sutherland, all land owners in Southern Alberta, down to the lowliest Tommy of the Imperial army who had scarcely a hope beyond the possibility of a little garden patch, the war's ex-warriors are living new lives on Canada's farm lands. Colonies of ex-British officers are to be found in many parts of British Columbia, and a more ambitious project of the provincial government is that of the establishment of seventeen hundred soldier farmers this spring in various community colonies.

Many British Imperial officers of high rank have taken up farming in Canada since the war, among whom might be mentioned General Sir J. Percy, who was chief of staff to the Second British Army in France and also served in the Crimea. Driven from Russia, many officers high in rank in the old Imperial army and officials of the Diplo-

matic service, have settled in Alberta and more are expected from China where they temporarily settled. French and Italian reservists called from their farms to serve the colors with their respective countries have returned, unfortunately in seriously depleted bands, but they have induced many comrades to accompany them and swell their ranks.

There is food for thought in this wholesale adoption of the profession of agriculture by the ex-soldiers of many countries. It typifies a desire continuously lurking, sometimes unconsciously, and often stifled, in the minds of thousands of men. The men who constituted the armies were in a peculiar situation in as much as, rudely torn away from the grooves they had followed all their lives, with often the prospect of a struggle to resume their old calling, the unique opportunity was offered them of choosing new callings, of beginning life over again. That so many men adopted the pursuit of agriculture in Canada is indicative not only of the comparative prosperity they visualized in following the Dominion's first industry but the inherent love of the soil in the hearts of most men. Thousands of others, not soldiers, would doubtless like to do the same but hesitate to take the momentous step. All they need is some similar abruptly working agency to tear them up and set their feet in the new direction.

Dutch in Canada

In view of the efforts Canada is persistently making to colonize her vacant fertile agricultural tracts with new people, primarily those who have had some previous experience of agriculture, it is very pleasing to learn that the Dutch government is so interested in the possibilities of farming settlement in Canada that through the Dutch Settlers' Union it has issued a pamphlet giving information about agricultural opportunities in Canada. It is a matter of reciprocal benefit, for whilst cramped little Holland is desirous of relieving itself of the congestion a continually expanding population brings about, Canada stands ready to receive these superfluous citizens, assured through the worth of those who have preceded them of their high calibre and sterling value.

Dutch immigration to Canada has always been of some relative importance. In the first ten months of 1921, 69 Dutch settlers entered Canada, which introduction was effected in the face of restrictive measures. In the fiscal year ending March 31st, 1921, prior to these measures coming into effect, a total of 595 entered Canada, a substantial increment over the previous year's 154. It is a tribute to the high qualities of these immigrants that in the record of 221 deportees from ocean ports, not a single Dutch citizen is included. At the time of the 1911 census there were 54,986 Dutch in Canada, and since that time about 5,200 have made their homes in the Dominion. It is safe to say that at the present time Canada's Dutch population numbers about sixty thousand souls.

War interfered with Dutch Immigration

In the years immediately prior to the war the average yearly influx to Canada from Holland was between one thousand and fifteen hundred, but the war and its aftermath have seriously

affected the human tide from this country as from others. With the sympathy and active co-operation of the Dutch government, which sees a bettering of conditions for her superfluous people in settling them on Canadian farms, Canada has confident hope of a resumption of the pre-war force of flow. Since the war such immigration from Holland as there has been, has been largely in the shape of parties of skilled agriculturalists, in the main well supplied with capital, and in a position to go immediately on the land and become producing citizens.

Holland is in the main an agricultural country and large flocks of sheep and herds of cattle are raised on the luxurious meadow grasses. Wheat, oats, barley, and rye are raised successfully on the small intensive farms, whilst Dutch flax and dairy products are world renowned. Sugar beets, tobacco and hemp are also grown extensively, whilst market gardening and fruit culture are followed profitably. It will be noticed that in its wide diversity of agricultural production it follows almost in an exact manner the variety of products raised on the farms of the Dominion, and herein lies the true measure of the value of Dutch settlers to Canada. The majority of those immigrating to Canada have all their lives, from the necessity imposed by the narrow limits of their holdings, practiced the best cultural methods. They come to Canada imbued with the finest agricultural knowledge, which they apply to the same crops they have been accustomed to on the larger acreages they are openly delighted with the possibility of securing.

Approximately 60,000 Dutch in Canada

The 1911 Dutch population of Canada of approximately 55,000 was divided as follows:—Ontario, 35,021; New Brunswick 4,320; Nova Scotia, 4,179; Manitoba, 2,835; Alberta, 2,951; Saskatchewan, 1,505; British Columbia, 1,255; Quebec, 213; and the Yukon, 14. The majority, it will be seen, are in the older provinces of Ontario and the Maritimes with their smaller farms. Here are to be found the older settlements where conditions to a greater extent approximate those the emigrant left behind in the Homeland. In the newer Western Provinces the distribution is fairly even, and to this territory it is that the modern immigration tide is flowing, individually and by conducted party.

It is to be hoped that the efforts of the Dutch government are successful in imparting a stimulus to Canadian immigration and will result in substantial numbers of new Dutch colonists for Canada. The Dutch have a history of successful colonization in many lands behind them, and in Canada, where conditions are in so many instances duplicated, they can be reasonably assured of achieving success and finding prosperity on the land which imposes no limitations or restrictions to their activities.

Mining Prospects in 1922

Whilst Canada's metallic mineral production for the year 1921 has a value of only about two-thirds of that of the previous year, this depreciation is by no means confined to Canada, and when compared with the productions of other mineral producing countries, Canada's output may, on the whole, be considered satisfactory for the year. The concern now, however, is Canadian mineral development in the year ahead, and the prospects over the entire Dominion are that the opening of spring will see great activity in all mining districts. Mining experts are unanimous in anticipating substantial development, whilst all indications are for a much increased output in 1922.

In British Columbia the copper mining situation is very bright, and there are a number of important projects in view which are likely to assume definite shape with the opening of the spring season. These include a large concentrating plant at Anyox, the smelting centre of the Granby Company; the new mill of the Britannia Company; and the proposed new mills at the Sunloch and Old Sport mines on Vancouver Island. It is anticipated that operations will be resumed on a substantial scale at the Copper Mountain mine, Princeton, whilst the Iron Mask at Kamloops and many similar properties now idle, will become active. The Granby Consolidated Mining and Smelting Company has been shipping as much blister copper as at any time in its history, two steamer loads per month going south en route to the eastern refineries, and this same activity promises to continue.

Gold Mining Industry Expanding

The gold mining industry of Canada is particularly healthy and expanding lustily. There promises to be a substantial development in this phase in British Columbia mining in 1922. Placer gold strikes on Cedar Creek near Quesnel Lake have been staked for seven miles each way and there is every prospect of favorable development. Gold discoveries on Iron Creek, Tuseko Lake district, have been attracting much attention. Much of the ground has been staked and something of a rush to the district is looked for in the spring.

It was recently announced by the Hon. T. D. Pattullo, Provincial Minister of Lands, on his return from England, that definite action towards the establishment of an iron and steel industry in British Columbia might be looked for at an early date. Subsequent to this statement, Major A. Belton, representing influential British interests, has arrived in the province and is waiting for government information as to what assistance the government is prepared to extend to any corporation undertaking the production of pig iron in the province and also to obtain detailed, authoritative data concerning the

magnetite, hematite, and other necessary resources of British Columbia.

The Calcium Carbonate Company at Merritt has resumed operations with new machinery and is turning out a ton of the finished material in an hour.

Northern Manitoba Area Promising

Mining men are looking for the most signal progress in the newer Northern Manitoba area in 1922. A good deal of both United States and English money is flowing into the mining districts of this section, and aggressive development may be expected in that region this spring and summer. Gold discoveries which have been made in the Rice Lake and Herb Lake districts encourage the belief that important gold mines will be developed in the Middle West in the not too far distant future. The entrance of the Hollinger interests, of Northern Ontario fame, into the Northern Manitoba field has occasioned a good deal of satisfaction. Work has commenced on the Murray property they are expected to acquire, and a considerable amount of money is to be spent on diamond drilling. Promoters of Northern Manitoba fields would appear to be having little trouble in obtaining the money to finance their schemes in England.

At the end of the year all mines in Saskatchewan were working to full capacity, and at the outset of 1922 faced a period of promised, uninterrupted activity with a maintained output.

The gold mines of Northern Ontario had the most successful year in their history in 1921, in the declining months extracting mineral to the extent of about \$21,000,000 per year. The year 1922 will probably see an increase of possibly \$2,000,000 in Hollinger production and \$1,000,000 on the McIntyre, making a total of close to \$25,000,000 within the range of possibility this year.

Canadian Oil Exploration

*By G. G. Ommanney, Development Engineer,
C.P.R., Montreal*

In an article which the writer contributed to "Agricultural and Industrial Progress in Canada," March, 1920, entitled "Canadian Oil Exploitation and Prospects," occurs the following:

"If we examine the geological map of this area (referring to Western and Northwestern Canada), we find that the great oil-bearing strata of the North American continent which have produced the richest and most prolific oil reservoirs of the world, constitute the principal geological formations of this vast Canadian territory. It requires, therefore, no more than an average share of optimism to predict that Canada's future as a world oil producer is certain and only awaits the assured result of capital expended on exploration by the drill."

A Prediction Confirmed

Since these words were written our prediction has been strengthened in a most striking and important manner. But a few months later, a new and highly productive oil

field was bought in the State of Montana, immediately south of the Alberta boundary.

This field now includes two of the largest producing wells in the country—the Frantz and the Decker-Collins—yielding 2,000 and 2,800 barrels a day respectively.

The significance of these discoveries to prospective Canadian fields will be discussed later.

On top of this we can to-day point to further confirmation in the important oil strike in the Canadian Northwest at the Imperial Oil Company's well, Fort Norman, Lat. 65 degrees, Long. 126 degrees, on the Mackenzie River. The oil, at first reports of the new well in early October, 1920, was reported as flowing through a six-inch casing and the yield (unconfirmed) as over one thousand barrels a day.

To-day (November, 1921) although the flow from the original Fort Norman gusher is reported to have fallen somewhat low, it is the general opinion in well-informed circles that likely areas in this territory (much of which are as yet unexplored) undoubtedly contain oil-bearing structures. The general attitude towards this field to-day is neither unjustifiably optimistic nor is it pessimistic. The field is handicapped by its distance from civilization and transportation difficulties. It nevertheless has great possibilities and is worthy of the fullest exploration. Owing to the remoteness of this field it is not to be expected that definite results of the work of the season 1921 will be received until the spring of 1922.

Oil Fields North and South of Alberta

Thus, we have to-day actually proven oil fields at the northern and southern extremities of the great settled region of Alberta now served by transportation.

What are the prospects of oil in this region? They are almost removed from the sphere of prediction to that of certainty.

Geologists and oilmen have long recognized and agreed upon the similarity of the Wyoming and Montana formations with those of Alberta. With the bringing in of the Montana gushers referred to above, oil has now been proved from Wyoming almost up to the International boundary. The oil in these two great producing Montana wells undoubtedly originated from the Devonian formations which extend throughout the whole of the vast Canadian territory to the north up to the newly proven field in the far Northwest.

Evidence of Gas Fields

The problem resolves itself into locating the structures favorable for trapping the oil and much work has and is being done to this end. Every producing gas field is in itself a potential oil field, and, as further evidence, the discovery of the great Albertan gas yielding fields (such as the Medicine Hat) have been followed by similar discoveries within 30 miles of the International boundary at Havre, Montana, producing from precisely the same sandstones as at Medicine Hat.

The small producing oil field at Dingman, southwest of Calgary—where the contortion of strata by the mountain uplift has greatly limited the area of producing fields—the vast bituminous seepages known as the Athabaska tar sands further north at Fort McMurray, the numerous gas wells developed throughout the country, extending 300 miles east of the Rockies and 700 miles north from the International boundary, are all contributing evidence.

This evidence in recent years has attracted the attention of the biggest oil interests in the world.

Reviewing the work of 1921 season we find that notable and encouraging progress has been made. The Imperial Oil Company are the principal operators, their activities covering the drilling of 14 wells widely scattered over Southern Alberta, Saskatchewan, the Peace River and the Northwest territories from the International Boundary almost to the Arctic Circle.

The depth of their wells as reported at this date are as follows:—

Boundary.....	2,180 feet
Muddy Lake.....	2,037 "
Misty Hills.....	2,088 "
Twin Butte No. 1.....	2,746 "
Twin Butte No. 2.....	3,820 "
Willow Creek.....	2,141 "
Black Diamond No. 3.....	2,050 "
Pouce Coupe.....	1,730 "

Coalspur and Irma are two new locations recently started, and in addition the original Fort Norman well is being deepened and three new wells are being drilled in this territory located at Bear Island, Link Claim and Bluefish Creek. The Pouce Coupe well in the Peace River district is perhaps the most promising of them. At a depth of 1,700 feet a strong flow of wet gas was encountered, and whilst no oil has yet (at November, 1921) been struck, the indications are considered hopeful, and as soon as the gas-producing vein has been cased off, drilling will be continued.

The Imperial Oil Company will continue their work at all locations next season until the presence of oil in commercial quantities has either been proved or disproved.

The British Columbia Government deserve credit for having taken a broad view of the importance to the country as a whole of proving up our possible oil structures, and, following a careful survey and report by Mr. John A. Dresser in 1920, have during the season 1921 carried out exploratory drilling at the locations recommended by him on the upper waters of Farrel Creek which empties into the Peace River between Hudson's Hope and the Halfway. We understand that three wells have been drilled and that gas has been encountered in each—this drilling is being prosecuted on scientific lines following up structures which have been defined and will certainly provide information of the greatest value.

Difficulties of Defining Structures

Elsewhere along the Peace River drilling has been continued on some wells, and though water has been encountered at most locations, there is at least one well in which the showings are of a highly encouraging nature.

Along the foothills of South Western Alberta and at other points other interests have been energetically exploring oil possibilities.

A realization of the magnitude of the country to be covered and the difficulties of defining the geological structures is necessary in order that we may properly grasp the situation. With such realization we need feel no pessimism because the work of a brief season has failed to disclose commercial oil fields of magnitude. In view of the information obtained and the work that is being steadily and carefully carried on, we can confidently repeat the assertion which we have previously published that Canada will, in the not distant future, become an important contributor to the world's oil supply.

A Forest Policy for Canada

By Edward Beck, Secretary Canadian Pulp and Paper Association

The Canadian forestry problem, as I see it, resolves itself into two divisions, the one Federal, the other provincial. The Federal Government, as the owner of thirty-nine forest reserves in Western Canada, covering an area of nearly 35,000 square miles in British Columbia, Alberta, Saskatchewan and Manitoba, has a problem in forest administration all its own to contend with. The fact that the Western Provinces have not relinquished hope of being able to persuade the Dominion to surrender control of their natural resources and to place them in this respect on a par with Eastern Canada, raises a question about the permanency of any forest policy that may be applied from Ottawa to the Western Provinces, and until that issue is settled there must necessarily be some uncertainty no matter how pressing may be the need for a fixed and determined line of action.

Furthermore, in addition to its responsibilities as a forest-owner, the Federal Government, through its control of all matters affecting Canada's external trade, is in a position to regulate, to some extent, the rate at which our forests in general are being consumed. It can do this through the application of the tariff laws to exports of timber if it so desires. There are thoughtful students of economic conditions in Canada who believe that it would be a wise and prudent course, and eventually a very beneficial one, if an export duty were to be applied to all our outgoing timber, particularly pulpwood. They argue that such a tariff would help to preserve our forest resources, stimulate the industries dependent upon them for existence and enhance the value both of the wood and its products in our foreign markets.

The Eastern Provinces

When it comes to the Eastern Provinces, more particularly Ontario, Quebec and New Brunswick, a logical forest policy would appear to be more easily definable. In these provinces the Crown lands are controlled by the local governments whether they are under license or not. These provinces are in a position to adopt and apply whatever progressive policies they please to their holdings. Some of them have already made a good beginning. The foundation of successful forestry, as of all successful enterprises, is knowledge. What is needed in all of our provinces is first of all, an accurate and complete survey of their forest possessions. There is too much guesswork and too much broad generalization at the present time, and no real progress can be expected until this vitally necessary work is accomplished.

Next in line should come a strengthening of our forest personnel. Canada, in comparison with Scandinavia, is pitifully weak in this respect. Not so much in point of quality, but in point of numbers. We have, without question, some of the most capable foresters in the world, men whose names carry authority in Europe as well as in America, but their staffs are inadequately manned. They are given insufficient support and are not permitted to organize their work on the scale necessary to ensure the best results.

Co-related to the question of an adequate forest service and perhaps preceding it in importance is that of forest education. We haven't nearly enough nor capable enough institutions for the training of forest engineers, rangers and forest workers generally, and until we make it an object for more of the right type of young men to adopt forestry as a profession, we shall continue to lag behind other countries.

Given a knowledge of the fundamentals, an adequate forest service and the proper means of training forest workers, the other problems which confront us, such as fire protection, the application of proper cutting restrictions and the adoption of the best means for reforestation, would be in a fair way of being solved. Rational cutting regulations, upon which so much dependence is placed by the foresters of Sweden and Norway, are a matter for provincial consideration in each case. They certainly ought not to stop, as they now do, at the mere fixing of an arbitrary diameter limit for the felling of trees. They should take into account other factors which go to make up the problem of how to obtain a sustained yield from a given forest area. They should be adopted only after joint consideration by the authorities and by the licensees, and, once agreed upon, they should be enforced with rigor and by the co-operative effort of all. It is here that adequate forest service would justify its cost.

When it comes to the question of dealing with cut-over woods and taking measures to ensure a regrowth, there is a diversity of opinion even among experts as to the best methods. It becomes, however, largely one of local conditions, timber species, natural reactions, nature of soil, etc. Artificial replanting may be advantageously applied in some instances, while in others it may be unnecessary or entirely impracticable, as in those cases where Nature can be depended upon to do the work unaided. A properly trained and adequately manned forest service should be

able to deal with it, the adequacy of the service implying, necessarily, the maintenance of nurseries, experimental stations and other equipment on a reasonable scale. All this, of course, would cost money. But it would be money well invested and would give good returns. Instead of the comparatively meagre provision they now make for forest purposes, the province of Quebec, Ontario and New Brunswick could well afford to set aside at least one-half of the revenues they derive from the Crown lands for the purpose of proper forest administration and development. In this way they would not only go on increasing their revenues from these sources indefinitely every year, but they would be building for the future, creating new capital for the State and contributing to the permanency of an industry in which Canada has an opportunity of leading the world.

In respect to privately-owned forests, these observations are also nearly all applicable. There are private forests in Scandinavia, particularly in Norway, which, as a result of careful cultivation in years gone by and at present, yield their owners a highly satisfactory income with all the regularity of a coupon-bearing government bond and without appreciable impairment of the original capital. Private forests over there have been developed along the line of securing a maximum annual yield from a given area without diminishing the extent of the original stock and many of the owners have achieved entire success. It costs money to carry on the operations, of course, but in spite of the heavy capital outlay the work is declared to be on an economically sound basis. It is a fact, too, that in Scandinavia the banking interests in extending credit are inclined to give more consideration to the forest possessions back of an industrial plant and the way in which they are being exploited than they are to the physical plant itself or what may be the immediate demand for its products. In other words, the Scandinavian forests have as great or a greater potential credit value than buildings and plant, which are looked upon in this country as more tangible assets.

Doing Progressive Work

There are some Canadian companies, of course, that have the right idea and are doing just as progressive work as is being done abroad, although most of it is of more recent origin. These are the companies which are carrying on their own reforestation programmes, building up forest reserves for the future and in as close proximity to their industrial operations as it is possible to get them. It has taken vision and much courage for these companies to adopt and carry out such a policy in the face of the prevailing skepticism as to its economic soundness and of lukewarmness on the part of the financial authorities. But I am confident, from what I have seen abroad, that the future will amply reward their enterprise. When those who, having the opportunity, have made no provision for the future, are faced with the necessity of going great distances for their wood supplies and are obliged to pay famine prices for them, these far-seeing companies I have mentioned will be getting their wood at a cost and in such quantities as will not only give them a tremendous advantage in the competitive field but will yield them a handsome return on what at present some regard as merely a severe drain upon their resources.

Of course I am not suggesting that any company or any individual can afford to restock the Crown limits. That would be impractical and financially impossible. So long as the Crown retains the title to the lands and the power to dispose of them as it will, so long must the Crown assure responsibility for the perpetuation of the forests on them. This, however, does not bar co-operative effort on the part of the Crown and the licensees to that end.

Standardized Education

It is true in Canada that East is East and West is West, and that in a good many respects an imaginary line divides the older and more conservative Eastern Provinces from that newer

and more energetic Western territory. Whilst instigated by a common loyalty to the Dominion and mutually striving for the same national ends, there exists a subtle difference in their modes of action and in the opinion as to the most effective manner of attaining the objects both are working for. And so each moves forward in its own method of progression.

West of the Great Lakes the various provinces in most matters have a feeling of constituting in most respects one territory, united in the manner of their composition, populated by a people with a common lot, moved by the same ideas, actuated by the same motives and impulses because their circumstances are similar. For this reason, and because still being in the moulding process they are more plastic, they find it less difficult to co-operate in matters affecting the good of their own territories and the entire country.

An example of this has been the standardization of elementary education throughout the West. Education in Canada is a matter of provincial jurisdiction and the various provinces on entering Confederation formulated their own systems and established their own policies. Each of the Western Provinces, in its own way, moved along what it considered the most progressive lines and, beset by the many difficulties and problems inevitable to a state of evolution and development, established systems which made Western Canadian education second to none on earth.

Education now Standardized

These systems in the different provinces, whilst similar in most aspects, differed sufficiently in important details to preclude any extensive interchange or co-operation. Teachers qualified in one province could not readily move into another but were under the necessity of taking the provincial examination before practicing their profession. The children of settlers moving from one part of the West to another found it somewhat of a handicap to adopt new methods and fresh textbooks.

As a result of a series of educational conferences between the Departments of Education of the four Western Provinces of Manitoba, Saskatchewan, Alberta and British Columbia, elementary education is now largely standardized throughout this territory, and as far as teachers, children and their parents are concerned, that vast area west of the Great Lakes to the Pacific constitutes one educational province. In the different provinces the requirements for entry to Normal School have been made the same and the training given in these establishments is largely standardized. The qualifications of the teachers are very similar and consequently their certificates have been adjudged of equal value, so that teachers may move with facility from one

province to another. Furthermore, there is a certain uniformity in text books which is yearly being widened to embrace a wider compass.

Nothing has been spared in Western Canada to give the child, particularly the boy and girl of the farm, the utmost education can offer, and it is the proud boast of this territory that not only are the elementary facilities within the reach of every child but a university education within his grasp. The Western Canadian provinces, in recognizing they have a common work to perform, have united for the achievement of many objects, and in the standardization of educational ideals have seized a propitious time to band themselves together for a purpose the enormous benefit of which only the future will fully reveal.

Canada's Markets for Live Stock

Compiled by J. Dougall, General Agricultural Agent, C.P.R., Montreal

The live question at the moment as applied to Canadian agriculture is markets. We have had a season's experience that very few who have been engaged in the industry have experienced before.

Our markets to the South (United States) have been very materially reduced by the action of the Fordney Tariff, with the result that the Canadian farmer has had to take losses on his products and especially on live stock.

Early in the summer a committee of the United Grain Growers visited the United Kingdom and after careful investigation decided to make some shipments of live cattle and attempt to pool their shipments. This, with the shipments exported by H. P. Kennedy of Toronto, Ontario, made up nearly all the exported cattle. The results, while they had the effect of keeping the Canadian prices up, were not what can be said to have been satisfactory. In some cases the cattle received a poor reception owing to the markets at Birkenhead being flooded with Irish and other cattle and on the whole the outcome has not been encouraging.

What are we to do then? Some method of marketing Canadian farm products must be found. As applied to cattle, there are two ways open. We must either ship our cattle out as live cattle and take what we can get for them, or ship them as chilled meat and get them to the English market on a fresh meat basis by killing on the Atlantic coast. The objection to the chilled meat trade in the summer of 1921 was that it was not bringing a price that would encourage shipments; since that time, however, the price of chilled meat has come up and the price of fresh killing dropped until the chilled product has now reached the price of fresh killed and somewhat better.

There is no doubt there is a market in Great Britain for our farm products, but they must be put on the market, which is highly competitive, in good condition and with as little overhead as possible.

The way out seems to be that we will have to follow the lead of the Governments of New Zealand and Australia and ship our products co-operatively.

It is not possible for the average farmer himself to ship for export. He must either use the speculator or co-operation, and sell on a pool basis so that he may get the average for a given period; if he ships only one carload he may find himself against a poor market.

It is to be hoped that something will be done during this winter that will put our export markets on a sound basis.

Motion Picture Films

A print of each of the following films issued by this department is deposited with the representatives listed on the back page. These are available upon application for use by schools, theatres, clubs, societies, boards of trade, and other associations and organizations.

Homemaking by Irrigation.—Irrigation farming in Southern Alberta, the various operations and their results.

The Land of Promise.—Featuring the well-known agricultural section of Battleford, Saskatchewan.

Opportunity.—Illustrative of Western Canadian opportunity, more specifically in the district of Lloydminster, Alta.

Livestock and Dairying.—The fine status and remarkable progress of this industry in Western Canada picturized.

Taming the Last West.—Depicting the evolution of the Canadian West from buffalo range to a modern agricultural area.

The Sunny Side of Rural Life.—The farmer on holiday, showing that life in Western Canada is not all work.

The Evolution of a Grain of Wheat.—The life of wheat seed from the time it is sown until its progeny enters into the composition of a loaf of bread.

Apple Growing in Evangeline's Land.—Orchard cult in the region Longfellow's poem made famous.

The Apple Harvest of the Okanagan.—Gathering and shipping apples in the beautiful British Columbia valley.

Curing Fish in Nova Scotia.—Depicting the various phases of curing and smoking fish in the Maritimes.

The Canadian Sardine.—The sardine caught, canned and distributed.

Some Water Powers of Eastern Canada.—The beautiful and powerful waterpowers of the Eastern Canadian provinces.

The Silver Fox Industry of Canada.—The domestic ranching of silver foxes in Prince Edward Island.

New Homes Within the Empire.—The camera follows the progress of a British immigrant from the first awakened interest in Canada till when he settles on a Western farm.

Departmental Publications

Any of the following publications will be sent free on request.

Alberta, Saskatchewan and Manitoba.—A descriptive statistical booklet on the three prairie provinces with full information on the West.

The Park Lands of Central Alberta.—Descriptive of the area tributary to the Calgary and Edmonton line of the Canadian Pacific Railway in Alberta. History, description of soils, development, lands open for settlement, and information for settlers.

Irrigation Farming in Sunny Alberta.—Full description of Alberta's irrigated lands, their progress, production and possibilities.

Business and Industrial Opportunities in Western Canada.—Full listings of industries existing and business openings in the provinces of Western Ontario, Manitoba, Saskatchewan, Alberta and British Columbia.

Canadian Pacific Reserve Farm Lands in Lloydminster and Battleford Districts.—Information of Canadian Pacific lands in these districts, history, farming information, progress, and possibilities.

Canada's System of Government.—Canadian government briefly outlined to portray its democratic traits.

The Story of Canadian Nickel.—History of the nickel mining industry.

Canadian Oil Exploitation and Prospects.—An expert engineer's history of Canadian oil development and future possibilities.

Canadian Water Power Development.—Authoritative and exhaustive survey of water power reserves and possible development.

Paper Pulp from Flax Straw.—An investigation engineer shows the possibility of the development of a new industry in the West.

Education in Canada.—The wide scope of Canadian education depicted to show that a settler need have no apprehension in this regard.

A Canadian Grain Handling Plant.—How Canadian grain is stored and shipped. Authoritative article on Canadian elevators.

Value of a Settler to Canadian Railroads.—Computation from reliable statistics of a farming settler's revenue-producing worth to Canadian railroads.

Bituminous Sands of the Athabasca Region.—Description with known values, and possibilities of development of the widely known tar sands of Northern Alberta.

The New Canadian Oil Field.—Dealing with the Arctic oil region of the new strike.

Water Powers of the Maritimes.—Authoritative article on the undeveloped power systems of the Eastern provinces.

Water Powers of Manitoba.—The water powers of this province dealt with exhaustively.

Oleomargarine.—History of oleomargarine in Canada and its future prospects.

Synopses of Natural Resources.—Forty-five pamphlets dealing briefly but concisely with Kaolin or China Clay, Oil Shales, Mica, Fluor-spar, Asbestos, Molybdenum, Magnesite, Fruit, Flax Fibre, Nickel, Coal, Clays, Salt, Copper, Zinc, Silver, Gold, Pyrites, Iron, Potash, Talc, Feldspar, Platinum, Phosphate (apatite), Manganese, Graphite, Cement, Barytes, Gypsum, Irrigation, Petroleum and Natural Gas, Corundum, Sulphates of Sodium and Magnesium, Timber and Pulpwood, Fish, Fur, Peat, Grazing Lands, Mineral Waters, Building and Ornamental Stone, Whaling, Sealing, Wheat, Oats and Barley, and Water Powers.

The Department of Colonization and Development

The Department of Colonization and Development has the following offices established in the United States, Great Britain and Europe, whose representatives, at any time, will be glad to furnish information regarding Canadian agricultural, industrial and commercial enterprises.

MONTREAL, P.Q.	H. C. P. CRESSWELL, Supt., 335 Windsor St. Station.
WINNIPEG, Man.	J. F. SWEETING, Industrial Agent, Canadian Pacific Railway.
CALGARY, Alta.	M. E. THORNTON, Supt. U. S. Agencies, Ninth Ave. and First St. East.
VANCOUVER, B.C.	E. J. SEMMENS, Travelling Industrial Agent, Canadian Pacific Railway.
NEW YORK, N.Y.	L. F. MOWREY, District Representative, C.P.R. Bldg., Madison Ave. at 44th St.
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CHICAGO, Ill.	C.P.R. BUREAU OF CANADIAN INFORMATION 140 South Clark St.
SPOKANE, Wash.	R. C. BOSWORTH, Dist. Representative, 202 Exchange National Bank Bldg.
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SAN FRANCISCO, Cal.	C. A. VAN SCOY, Dist. Representative, 299 Monadnock Building.
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or any agent of the Canadian Pacific Railway Company or Canadian Pacific Steamships, Ltd. in United States, Great Britain, or Europe.

J. S. DENNIS, CHIEF COMMISSIONER,
Department of Colonization and Development,
Canadian Pacific Railway Company,

Ask the Canadian Pacific about Canada



Agricultural and Industrial Progress in Canada

A monthly review of Agricultural and Industrial progress in Canada, published by the Department of Colonization and Development of the Canadian Pacific Railway at Montreal, Canada.

VOL. 4—No. 3

MONTREAL

March, 1922

The Western Canadian Farmer

PEOPLE often refer to the Western Canadian farmer as though he constituted a type. Nothing could be farther from the truth, and the mistake could only be made by those who have never visited the areas of the Western Canadian provinces, slowly being rendered productive, and have not come into contact with the men who are effecting this.

Western Canada is still a territory in a state of transition where the process of shaking down and levelling is still in progress, and its people accordingly comprise a collection of classes and castes, the complexity of a myriad types and a wide variety of characteristics, all fused into a perfect democracy. Some characteristics they have in common, certainly, such as are born of the invigorating, virile atmosphere or spring from the life's demand for quick action and rapid thinking, but the impression of sameness is entirely absent and the individual is still the individual. This is after all but natural.

Western Canada has become the Mecca of the land-hungry and for those seeking the independence which the land can assure. It is the goal of peoples lured by the same dream from the corners of the globe, a bourne of many new hopes, a land in which faith in oneself and one's capabilities is created anew.

Such instincts and desires are not limited to people of one appearance, one caste, or one intellectual capacity, and so the tillers of Western Canada's lands run the entire gamut of human type and trait. They are of every conceivable class and kind, differing in the individual but alike in spirit and endeavor.

It is probably safe to say that the majority of men farming the Western Provinces have not

been farmers all their lives. It is both interesting and significant, certainly, to note that many of these who have come to the top as the Dominion's premier agriculturalists had no conception of land activities previous to going to the West. A great proportion undoubtedly adopted farming after having reached maturity. Deep in the hearts of most men there is a love of the land and of the life of the open.

Those who are to be found in Western Canada form an elect band. Many left trades and professions after years of pursuit, often purely from distaste for these callings. Many more, despite success in their business callings, felt the greater glamor of the land and left what they were doing at its beckoning. Many thinkers, tiring of the eternal struggle to make

a daily wage cover a multitude of expenses, sought the land where independence through perseverance and energy was attainable; still others, with growing families and planning for them, saw the greatest future in the basic industry of agriculture as well as oppor-

tunity to keep sons and daughters about them. Haunted possibly by the prospect of old age and inability to make adequate provision against it, brought others to take thought of developing a harbor for this period. Many realizing that the true fundamental of wealth lies in the land, and seeing the enviable position of people in older countries whose ancestors were pioneer land settlers, are building up homes to be their posterity's for all time.

They are men who have seen the same vision and followed it; who dream the same dreams and often see their fulfilment in their lifetimes. Were there more genuine thinkers, more men courageous enough to follow their convictions, more actuated by a desire to do the

A DECADE'S GROWTH

	1921	1911	Increase	P.C.
Nova Scotia.....	523,837	492,338	31,499	6 1/4%
New Brunswick.....	387,839	351,889	35,950	10 %
Quebec.....	2,349,067	2,003,232	345,835	17 1/4%
P. E. Island.....	88,615	93,728	-5,113	-5 1/2%
Ontario.....	2,929,054	2,523,274	405,780	10 1/2%
Manitoba.....	613,008	455,614	157,394	34 1/2%
Saskatchewan.....	761,390	422,432	338,958	80 1/4%
Alberta.....	581,995	374,663	206,332	55 %
British Columbia.....	523,353	392,480	130,873	33 %
Yukon.....	4,162	8,512	-4,350	-51 %
Northwest Territories.....	6,684	18,481	-11,797	-63 1/2%
Canadian Navy.....	485	.....	.....	.....
Totals.....	8,769,489	7,206,643	1,562,846	22%

Agricultural & Industrial Progress in Canada

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Norman S. Rankin, *Editor of Publications.*
E. L. Chicanot, *Asst. Editor.*

best for themselves and families and to build up prosperity for many lives to come, there would be more settlers upon Western Canada's fertile tracts. As it is, those already there form an enviable band of thinkers and workers to whom posterity will owe much gratitude.

Canada's Field Crops, 1921

*By J. Dougall, General Agricultural Agent,
C.P.R., Montreal*

The aggregate value of all the field crops of Canada in 1921, according to the estimate of the Dominion Bureau of Statistics, is \$931,863,670 as compared with \$1,455,244,050 in 1920 and \$1,537,170,100 in 1919, the highest on record. Canada's wheat crop last season was the largest in her history though its value fell below that of 1919 and 1920, due to the sharp decline in the price of wheat.

Wheat.—The total yield of wheat in Canada for the year 1921 is now finally estimated at 300,858,100 bushels from a sown area of 23,261,224 acres, as compared with 263,189,300 bushels from 18,232,374 acres in 1920, and with 228,409,780 bushels from 16,967,561 acres, the annual average for the five years 1916-20.

The total for 1921 consists of 15,520,200 bushels from 720,635 harvested acres of fall wheat and of 285,337,900 bushels from 22,540,589 sown acres of spring wheat. The average yield per acre for all wheat in Canada is 13 bushels for 1921, as against 14½ bushels in 1920, and 13½ bushels, the five year average. The average yield per acre for fall wheat in 1921 is 21½ bushels and of spring wheat 12¾ bushels.

Oats.—The finally estimated total yield in 1921 is 426,232,900 bushels from 16,949,029 acres, as compared with 530,709,700 bushels from 15,849,928 acres in 1920, and with 432,926,000 bushels from 13,980,453 acres, the five year average. The average yield per acre is 25¼ bushels in 1921, as against 33¼ bushels in 1920 and 31 bushels, the five year average.

Barley.—A total yield of 59,709,100 bushels from 2,795,665 acres, as compared with 63,310,550 bushels from 2,551,919 acres in 1920, and with 58,962,988 bushels from 2,509,267 acres, the five year average. The average yields per acre are 21¼ bushels in 1921, 24¾ bushels in 1920, and 23½ bushels, the five year average.

Flax.—Flax seed gives a total of 4,111,800 bushels from 533,147 acres, as compared with 7,997,700 bushels from 1,428,164 acres in 1920, and with 6,744,080 bushels from 1,033,336 acres, the five year average. The yield per acre is 7¾ bushels as compared with 5.60 bushels in 1920, and with 6.55 bushels the average.

Potatoes.—The final estimate of the production of potatoes is 107,246,000 bushels from 701,912 acres, as compared with 133,831,400 bushels from 784,544 acres in 1920. The yield per acre is 152¾ bushels for 1921, as against 170½ bushels in 1920.

Other Crops.—For the remaining crops the total yields for 1921 are in bushels as follows, the corresponding totals for 1920 and for the five year average being given

within brackets: Rye, 21,455,260 (11,306,400; 7,350,360); peas, 2,769,981 (3,528,100; 3,298,448); beans, 1,089,900 (1,265,300; 1,580,776); buckwheat, 8,230,100 (8,994,700); 8,809,280); mixed grains, 22,271,500 (32,420,700; 24,535,316); corn for husking, 14,904,000 (14,334,800; 11,905,040).

The Prairie Provinces

The total yield in the three prairie provinces (Manitoba, Saskatchewan and Alberta) are estimated as follows:

Wheat, 286,098,000 bushels from 22,181,329 sown acres, as compared with 234,138,300 bushels from 16,841,174 acres in 1920.

Oats, 284,147,500 bushels from 10,819,641 acres as compared with 314,297,000 bushels from 10,070,476 acres in 1920.

Barley, 44,681,600 bushels from 2,109,065 acres, as compared with 40,760,500 bushels from 1,838,791 acres in 1920.

Rye, 19,109,700 bushels from 1,688,228 acres as compared with 8,273,600 bushels from 482,011 acres in 1920.

Flax seed, 3,945,700 bushels from 516,972 acres, as compared with 7,588,800 bushels from 1,391,076 acres in 1920.

Canada's Dairy Industry

Dairying is one of the oldest and has now become one of the most important industries of Canada. The rapid increase it has experienced in recent years with the wide adoption of the manufacture of dairy products in the Western Provinces has been one of the most pronounced features of Canadian agriculture. Creameries have multiplied, production has increased, exports have swelled with the great demand of the products from all countries, and in 1921 a Canadian cow, Bella Pontiac, an Ontario Holstein Freisan, set a new world's record in milk production according to official tests. The high standard of Canadian dairy cattle is so recognized that there is a general demand for them in other countries to improve and strengthen local herds.

Dairying in Canada largely owes its modern development and expansion to the introduction of the factory system for the making of cheese and butter, to the invention of the centrifugal cream separator, and the facilities afforded by improved methods of cold storage. The first Canadian cheese factory was established in Ontario in 1864 and the first Canadian creamery for butter-making in Quebec in 1873. The first centrifugal cream separator was imported from Denmark in 1882 and the Government organization of cold storage services dates from 1895.

Number of Factories Operating

According to official records the number of dairy factories operating in 1920 was 3,161, comprising 1,045 creameries, 1,683 cheese factories, 405 combined butter and cheese factories and 28 condenseries. The number of patrons of dairy factories was 276,693 and the number

of cows furnishing them milk 1,718,999. The production of creamery butter in 1920 was 111,-691,718 pounds valued at \$63,625,203, compared with 103,890,707 pounds valued at \$56,371,985 in 1919. The average price per pound for the whole of Canada was 56.96 cents in 1920 and 54 cents in 1919. All provinces except Manitoba and Alberta showed increased productions of butter. The quantity of factory cheese produced in 1920 was 149,201,856 pounds, valued at \$39,100,872.

Quebec and Ontario are the leading dairy provinces of Canada, there being but a small margin between the two in the production figures of creamery butter. A remarkable feature is that Alberta, one of the Prairie Provinces, which only within recent years has taken seriously to dairying, takes the next place followed by Manitoba and Saskatchewan, the other two of the trio. The three Prairie Provinces in 1920 accounted for 23,247,884 pounds out of a Dominion production of 98,790,494.

In the 3,161 dairy factories established throughout the Dominion, there are \$33,345,305 invested in capital, and these establishments give employment to 11,072 persons receiving annually \$8,968,089 in wages and salaries. The total value of all the products of these factories in 1920 was \$146,336,491. Patrons of these factories received the sum of \$113,550,718.

Great Increase in Home Consumption

In 1868 the quantity of cheese exported from Canada was 6,141,570 pounds and of butter 10,649,733 pounds. Exports of cheese for the year ending December, 1920, amounted to 142,-767,545 pounds and of butter 13,361,020 pounds. Cheese in 1904 reached its maximum exportation with 233,980,716 pounds, and butter in 1903 with 34,128,944 pounds. The decline since that does not represent any falling off in the volume of total dairy production but is due to the greater requirements of home consumption caused by the relative increase of urban population since the beginning of the present century. This has had the effect, to a considerable extent, of increasing the demand for milk consumed whole and of replacing the manufacture of cheese for export by that of butter sold for home consumption.

Canadian dairy products have secured notable awards at many international competitions and are now consequently in universal demand in many countries some of which are themselves famed in dairying. It is therefore gratifying in the newer Western Provinces where the greatest development in agriculture is taking place, to witness the ever increasing interest taken in this industry and the annually growing volume of its production,

Lime Fertilizer in New Brunswick

By O. C. Hicks, B.S.A., Dept. of Agriculture,
Fredericton, N.B.

The farmers of New Brunswick used during the year just past, ten thousand tons of pulverized limestone to increase the productiveness of their fields. Not a ton remained in the storage bins of the manufacturers of this product at the close of the spring's seeding operations. To what circumstance can be attributed this remarkable popularity of pulverized limestone, and the development of a local industry for the utilizing of the most extensive mineral deposit in the province? Briefly, it is due to governmental agricultural demonstrations and propaganda.

Until within the past few years, the beneficial effects of liming had been disclosed to our farmers only through the use of the lime compounds, marl, quick-lime, and the refuse of lime-burning kilns, consisting of partly burned lime-rock. Following the introduction by the Government of a portable lime-pulver in 1915 for demonstrating the production of pulverized limestone, the mass of experimental evidence adduced on hundreds of farms of the effects of this mineral to increase soil productivity, disclosed a means whereby the rich limestone deposits so widely distributed over the province might be made a factor for the expansion of agricultural industry and an opportunity for capital in developing a local industry.

Deposits of High Grade Stone

The province contains great deposits of high grade limestone which lend themselves ideally to grinding. These afford a vast supply of raw material so situated as to be available for economic production of agricultural lime. There are but few counties in New Brunswick which are entirely lacking in limestone formations, although many of the rock strata in the upper St. John River valley counties are not suited to development. In general, limestone which is suited for the making of lime for the trades is also adapted for use in agriculture, and the industry of lime-grinding has attained its greatest development in that district where quick-lime for the trade has been manufactured in greatest quantity, in St. John county, where transportation facilities and other details of similar importance have contributed to the working of the extensive lime deposits contiguous to Kennebecasis Bay, at Brookville and Torryburn. The limestone of this region is almost entirely high calcium stone, and considered from an agricultural viewpoint it constitutes one of the most valuable resources of the province.

Locations of Outcrops of Limestone

The various limestone formations in the province differ widely in chemical composition. Outcrops of limestone at various localities have been analysed, and the difference in composition may be noted in the stone at the following places:

Locality	Carbonate of Lime.	Carbonate of Magnesia.
PETITCODIAC.....	94.1	
SUSSEX.....	83.45	
ST. CHARLES.....	98.25	
HOPEWELL.....	63.23	
FLORENCEVILLE.....	79.73	3.42
HARTLAND.....	90.94	0.41
PLASTER ROCK.....	63.60	
HILLSBORO.....	86.75	1.30
ELGIN.....	95.31	1.16
PETERSVILLE.....	93.12	0.83
KESWICK.....	60.15	
PETIT ROCHER.....	95.00	0.90
ELM TREE.....	98.00	0.68
QUEENSTOWN.....	94.00	
NORTHWEST MIRAMICHI.....	71.25	
TORRYBURN.....	93.15	0.74
BROOKVILLE.....	96.74	0.30

A chemical soil analysis to determine the lime requirements of soil samples taken in the nine counties wherein these deposits of lime rock occur, disclosed the fact that in the top soil, represented by these samples, from two to three tons of pulverized limestone were required to neutralize soil acidity. Herein was disclosed the probable cause of the low crop yields per acre. Farmers wanted cheap lime and, since it was not available in any quantity, the problem of its manufacture and of meeting the farmer half-way in his desire to secure ground limestone, was referred to the Minister of the Department of Agriculture to take action.

It was decided in 1920 that, in the interests of the agricultural industry, the Government of the province would equip a modern lime-pulverizing plant of such capacity that the peak-load of demand, which occurs in the spring months, could be handled. The railways offered concessions of tariff, to apply to the shipments of agricultural lime, and the comprehensive policy of supplying cheap lime was fulfilled in the purchase by the Government of a lime quarry, so situated as to command excellent transportation facilities, and of rock-crushing machinery capable of an output of eighty tons a day.

Plant Installed at Brookville

The grinding plant was installed at Brookville and a contract entered into with the contractors, now the Brookville Manufacturing Company, to supply ground limestone at three dollars per ton in bulk, f. o. b. Brookville, and to pay a royalty of twenty-five cents per ton to the Government Treasury. The factory, a three story building, has the most modern equipment of lime crushing machinery in Canada. This consists of a large jaw crusher for coarse crushing, a ring-roll pulverizing mill and steel equipment for screening, elevating, conveying, weighing and sacking, installed by the Sturtevant Mill Company, Boston. The jaw crusher used for the preliminary breaking of the rock and preparing it for the pulverizing mill, is of cast steel design with a jaw opening of 14" x 24". The moving jaw is hung from the top so that where the large rocks are first nipped the jaw motion is the least. After the first fracture the partially crushed pieces pass down between the jaws toward the discharge, at which point the motion is maximum, crushing the rock to pieces of egg size which then are conveyed by a chute to the pulverizer. A 75 H. P. electric motor supplies the power for driving the crushing and pulverizing machinery, as well as operating a compressed-air apparatus by which the drilling for the quarrying of the stone is done.

Industry Now Firmly Established

The cost of producing agricultural lime closely approaches the contract selling price at which the Brookville Mfg. Co. operate. The manufacturers' hope rests in the disposing of a large output evenly distributed during the fall, winter and spring months. The items which make up the costs are: quarrying, drilling, shooting and sledging the stone to a proper size for crushing; wages for superintendence and mill help; replacing of worn parts of machinery, power and interest on investment.

The patronage extended to the operators of lime grinding plants during the past year indicates that in the future the grinding of limestone will be a very important industry. The output of the Government-owned Brookville quarry for the provincial fiscal year ended Oct. 31st, was six thousand six hundred and sixty-six tons. Other private operators sold a considerable quantity, which, with the quantity ground at Brookville, aggregate ten thousand tons.

Testimonies of the high estimation held by farmers of pulverized limestone as a soil amendment for increasing crops, and particularly as a fertilizer for red clover, manifest that greater quantities will be used in future years, and the stability of this local industry is thereby assured.

Loganberries in British Columbia

An attempt is being made by the Provincial Department of Agriculture to stimulate the production of loganberries in the Pacific coast

province of British Columbia, to induce more berry growers to include the loganberry in their crops and encourage newcomers to secure the fertile vacant lands of the Pacific slopes for this purpose. This endeavor has the best of support and justification in the proved adaptability of the province's soil and climate to this culture and in the unqualified success which has so far attended efforts which have been promoted on a small scale. The drawback which growers previously experienced in the lack of markets has largely been overcome, and the demand for the berry and its products is on the increase as their peculiarly desirable qualities are becoming more generally known and find wider favor. There would appear to be a decidedly bright and promising future ahead of this industry in British Columbia and the pursuit will provide a profitable living to many growers.

Loganberries are, so far, a fruit peculiar to the central Pacific coast of North America. Though this fruit was first produced in California, it was not in this State that the berry was brought to its state of perfection or made for itself a place on the market. Loganberries must have a climate that is damp and cool, with no hard frosts. A warm but not hot climate is desirable, whilst the salt sea air is especially conducive to the healthiest and finest growth. Such a climate is found west of the Cascade Mountains in the Columbia river basin as far as thirty-five or forty miles north of the international boundary. It has even been suggested that the equable climate of the North British Columbia coast would suit the loganberry excellently. A promising area is the west coast of Vancouver Island.

A Revenue of \$40,000

In 1920 the total acreage in British Columbia devoted to the culture of the loganberry was 226 acres, less than one half of one square mile, 91 acres being on Vancouver Island and 135 acres on the Mainland. The total revenue derived from this acreage was \$40,642. A total of 2,105 crates of the fresh fruit were marketed at prices ranging from \$4.15 to \$4.50 per crate, and accounting for \$9,216.80; 158,672 pounds of jam sold at 19 and 20 cents per pound realized \$31,425.20. Taking the whole revenue together an acre of this fruit was worth approximately \$180 to the growers.

Loganberry juice is just coming into world-wide demand. There is a tang about it which no other fruit juice has, and it appeals to the palates of those who have been accustomed to stronger liquors. Loganberry jelly is also growing rapidly in popularity and is much in request. Since the advent of loganberries among the world's fruits seven years ago, they have rapidly passed the pioneer growing stage and have fully entered into the class of fruits scientifically produced. The market for the fruit and its products has

been created and a greater number of countries are asking for shipments which it is beyond the supply of manufactured goods to furnish.

On the American continent there is only a relatively small section of Northern Pacific lands in a position to supply the demands for loganberries. The increasing demands for the berry are so many urgings to growers to make profitable in this manner some of British Columbia's two million acres of land vacant but suited to berry growing. Whilst on the other side of the line, where conditions are not as fine, large acreages are being devoted to loganberry production, British Columbia is neglecting her opportunities in the same regard.

No other business, it is claimed, pays such large returns for so little labor besides building up many tributary industries, and there exist in the province countless opportunities for present growers and new settlers.

Honey Production in Western Canada

A noticeable feature of Western Canadian agriculture in recent years has been the progress recorded in the adoption of beekeeping and the production of honey as a commercial venture, a line of farming hitherto not commonly associated with the Canadian West because not practiced there to any extent. In the earlier days of Western Canadian settlement, farming was largely conceived in terms of extensive grain fields and giant herds of cattle, and the impression was created, when farmers gave their almost exclusive attention to these branches, that the land was unsuited to other phases of farming which subsequent developments have disproved. As the farmers of the West have become more settled, however, and discovered by experience and experimentation the actual virtues and properties of the soil and climate, the more general pursuit of diversified farming has become the rule. It has incidentally been discovered that the Western provinces, particularly their irrigated sections, are admirably adapted to the production of alfalfa and other clovers, and this has administered a pronounced stimulus to beekeeping which has made remarkable progress, particularly in Manitoba and British Columbia.

Canadian honey is unsurpassed in quality, and owing mainly to the warmer summer and abundance of nectar-producing flowers until frost, the average yield per colony is greater than, for instance, in the British Isles. Whilst Eastern Canada has had a large annual honey production for years, a general disbelief prevailed that honey could not be produced successfully in British Columbia, and only comparatively recently has it been proven conclusively that bees thrive as well and honey to as large extent and of the same high quality can be raised in the West as in the East.

The Irrigated Districts Great Producers

The natural bloom of Alberta throughout the season affords abundant food for bees, and the alfalfa fields of the irrigated districts, fast arriving at the premier place in this respect on the continent, and the clover beds of the northerly and central districts, give adequate supplies of nectar and pollen for countless hives. There is no question of the excellency of conditions in British Columbia, particularly in the renowned fruit districts. Manitoba's successes stand as proof of adaptability, whilst the similarity of conditions in Saskatchewan indicate all that might be done in the province of beekeeping.

British Columbia's honey crop in 1921 amounted to 309,074 pounds, according to the provincial apiarist, which sold at an average price of 29 cents per pound realized a revenue of \$86,631. During the year the number of apiaries in the province increased from 1,896 to 2,072 and the

number of hives from 9,539 to 10,329. The Okanagan Valley, famous the world over for its fruit, has taken enthusiastically and seriously to apiculture, to which the valley with its thousands of fruit trees is so admirably adapted. During the year an important consignment of Dutch bees, celebrated for their honey-producing qualities, was introduced to improve the strain of bees in the Kelowna (British Columbia) district.

In Manitoba, the first settled of the Prairie Provinces and the West's most eminent wheat area, the progress made in beekeeping has been little less than phenomenal, and it has assumed a long lead over the other provinces of the West in the matter of honey production. Its crop in 1921 amounted to 903,000 pounds derived from 14,721 colonies of bees. As far back as 1903, the Manitoba Beekeepers Association was formed and it has now well over one thousand members. In certain settlements, notably Beausejour, Ladywood, and Brokenhead, beekeeping has become one of the leading industries. Instances of success in this cult are reported from the Swan River Valley in Northern Manitoba, where a farmer secured a return of \$1,500 in one season from thirty-three hives, and at Dominion City where from a stray swarm settling on his farm six years ago, a farmer now has seventy-six colonies and last year sold more than two tons of honey at 35 cents per pound.

1000 lbs. from 13 Hives

Production figures of the province of Saskatchewan are not available; the output is substantially less than that of the sister province, though it possesses the same opportunities and similar advantages. The settling process to the same extent among farmers, has not yet taken place nor the lighter sides of farming been adopted to the same extent. The possibilities of the province in apiculture are, however, ably illustrated by the single experience of a farmer in the Grenfell district who obtained one thousand pounds of first class honey last year from thirteen two-frame hives, in addition to which his bees increased to seventeen colonies. He only started beekeeping as an experiment and hobby in 1917 but is now an enthusiastic advocate of its general adoption in the province on a commercial scale.

Alberta also lags behind as yet in the matter of beekeeping, though its advantages are yet greater than either two of the other prairie provinces. The experience of an Edmonton beekeeper illustrates what can be done in honey production even away from the alfalfa districts. Starting out with a foundation swarm of mixed bees he managed, by importing high-bred queens, to so improve it that in a few years he had a purebred strain of Italian bees. He keeps from ten to fifteen hives and disposes of the increase in the spring or fall. He has secured one hundred pounds per hive, each of which returns him \$40.

Honey Imports Greatly Exceed Exports

Experimentation in beekeeping in the Western Canadian provinces has been extensively carried on by the government experimental farms with the result the following figures were obtained as to the net value of production per colony of bees in the different provinces: Brandon, Manitoba, \$3.27; Indian Head, Saskatchewan, \$11.83; Lethbridge, Alberta, \$16.49; Lacombe, Alberta, \$12.79; Invermere, British Columbia, \$13.26; Summerland, British Columbia, \$11.81.

Though the production of honey in the Western Canadian provinces is not as yet very great, sufficient has been effected to prove that this is not due to unsuitability of location but to the fact that apiculture has never been extensively followed in these areas. Experts are satisfied that the West can produce as good honey as the East, and the prairies are coming in an ever increasing extent to be less dependant on Ontario and the Eastern provinces as well as the United States for their supplies of this succulent edible.

There is ample room for a substantial development of the industry in Western Canada, and those contemplating the adoption of beekeeping need have no apprehension of difficulty in disposing of the output. Canadian trade figures show that in the fiscal year 1921, whilst Canada exported to the United Kingdom, United States, France and

other countries honey only to the extent of 36,929 pounds, valued at \$9,195, she imported from the United States, Australia, Jamaica, Hawaii, and other countries the same product to the extent of 683,149 pounds valued at \$128,751. The Western provinces should not only wipe out this necessity of importing but widen the scope of Canada's honey exports.

"Emergency" Tariff's Effect on Canada

By C. W. Cates, Ottawa, Ont.

Canadian trade returns show that during the seven months that the "Emergency" tariff was in force up to December 31st, 1921, the value of exports affected by it to the United States fell to the extent of nearly 75 per cent., or from \$125,480,491 during the same period in 1920 to \$32,473,510 in 1921. The returns also show that the decrease in value during December was the heaviest of any month, having been equal to about 80 per cent., as compared with the figures for December, 1921. That is to say, while the value of exports affected by the tariff was \$32,026,049 in December, 1920, it was only \$6,545,541 in December last year.

Exports of wheat have suffered the most. During the seven months period in 1920 the shipments to the United States were 30,823,177 bushels, valued at \$69,935,391; whereas for the same months in 1921 they were only 10,923,926 bushels, valued at \$13,329,507. It will thus be seen that in so far as value is concerned, wheat accounts for more than 50 per cent. of the decline. Livestock has also been hit hard. During the seven months of 1920 the exports of cattle were 250,056 head, valued at \$19,341,392; during the same months in 1921 they were 134,774 head, valued at \$2,749,131. Exports of sheep in the same period, 1920, were 168,247 head, valued at \$1,600,356; in 1921 they were 80,910 head, valued at \$449,183.

Wheat Flour, Meat and Wool

Exports of wheat flour, which in the months under consideration in 1920 were 607,015 barrels, valued at \$6,782,998, were only 242,384 barrels, valued at \$1,530,941, during the same months in 1921. Potatoes were also hit hard; for whereas in the last seven months of 1920 exports were 1,578,350 bushels, valued at \$2,075,775, in 1921 they were reduced to 518,056 bushels with a value of \$489,241. Exports of meat of all kinds which in 1920 were 31,350,000 pounds, valued at \$5,680,010, in 1921 were only a little more than 24,000,000 pounds valued at about \$3,000,000.

Wool exports were cut into most deeply of all, for whereas these during the last seven months of 1920 were 4,623,223 pounds, valued at \$1,463,000, in 1921 they were only 127,146 pounds, valued at \$13,562. Exports of fresh milk were reduced to some extent but not heavily; on the other hand those of condensed and preserved milk were cut from 9,967,280 pounds in 1920 to

1,202,182 pounds in 1921. The marked falling off in the latter was, however, due more to the reduction in the price of fresh milk.

Where Tariff Made Little Difference

The trade returns show that when there is a scarcity of a product in the United States that Canada can supply, the tariff makes very little difference to the demand. For example, the exports of apples, which during the seven months ending December in 1920 amounted to only 23,460 barrels, were 480,000 barrels in 1921; exports of flaxseed, which in the last seven months of 1920 were 1,188,000 bushels, were 2,625,000 bushels in 1921.

As exports of wheat formed the largest percentage of the value of exports in 1920, and as they were not nearly so heavy during the early months of 1921 as during the closing months of 1920, it is probable that the "Emergency" tariff has done its worst. Even in spite of the high duty of 35 cents a bushel, the demand for Canadian hard wheat for mixing has been such that nearly 11,000,000 bushels went over the border during the last seven months of 1921.

In considering the foregoing figures, it must be taken into account that figures for quantities are a more accurate measure of the effect of the tariff on exports than are values.

As Others See Us

Canada's economic situation as compared with other countries of the world at the present time, is briefly summed up by *Barron's National Financial Weekly* in an editorial which again becomes the subject of an article in the *Wall Street Journal* at a little later date. To see ourselves as others see us, particularly through the columns of such influential U.S. publications, at this time of general reconstruction, is both interesting and encouraging. The editorial says:—

Canada has her troubles. They are the lesser problems of resumed growth, not of reconstruction. She has no war currency to deflate. Her budget practically balances. In foreign trade her cash position is stronger than a year ago. Her production increases. No other country in the world can point to the combination of all these factors in the beginning of 1922.

If the course of exchange be true augury of 1922 eventualities, the Canadian outlook is 100% better than a year ago. The new year opened with Montreal dollars at a 5% discount. The old year began business with Montreal dollars worth 85 cents apiece in New York.

In the particulars which receive first consideration when methods of actual reconstruction are authoritatively discussed, currency, budget and foreign trade, the Dominion satisfies the requirements of international credit.

But for railway investments, public revenue for two-thirds of the current fiscal year would exceed expenditure by a surplus almost again as large as the deficit of \$26,000,000 disclosed. Revenue is larger than in 1920.

Originating a generation ago, the Canadian railway problem outranks all others in fundamental importance. But it has always been and remains a detail of growth, huge as it bulks to-day.

Actual gain in cash position of Canadian foreign trade is stronger by \$150,000,000 than 12 months ago. Both exports and bank clearings have declined less than our own.

Land values have happily escaped most of the inflation which carried wheat on the ground from 70 and 80 cents a bushel to \$2 and \$3. Pessimism, faithfully portrayed by commercial reviews, in their New Year's greetings, has, as was human, run riot in western mercantile centres. The fundamentals, calling for more industry in compilation, have been neglected.

Grain production is of record size. At the lowest prices since 1915 the farmer receives more real value of all kinds out of those prices than wheat boards could ever bring to him. Land values at least have not to undergo the sharper wrenches of deflation.

Immigration sets in. Building revives and building costs decline. Production increases. Where is the outlook better or as good?

A Field For British Industries

Under the title "Canada a Field for British Branch Industries," the Commercial Intelligence Service of the Dominion Department of Trade and Commerce has issued an attractive pamphlet, outlining in a comprehensive manner the advantages accruing to British manufacturers locating in Canada. The booklet, compiled by Mr. P. W. Cook, Junior Trade Commissioner, assisted by officials of the Natural Resources, Intelligence and Water Power Branches of the Department of the Interior, the Departments of Labor and Secretary of State, etc., fills a long-felt want; we propose to publish monthly (with permission) selected chapters.

The following is a general review of the publication which, clearly printed on good stock, well illustrated by half-tones, graphs, maps and diagrams, should be read with interest by every progressive, British business man.

To appreciate the present condition of Canadian industries, one must look back a little and trace their development in the last few decades. Broadly speaking our present industries are of very recent growth, a growth which may be said to have commenced about 1896. Prior to that date Canada could not justifiably be called an industrial country, as agriculture constituted by far the greatest proportion of her total production. However, during the last thirty years her industries have increased tremendously. As an American writer put it in a small, but very intelligent handbook on the Dominion of Canada, published by the Bankers' Trust Company of New York, "The combination of cheap power, favourable living conditions for labour, and good labour markets, is rapidly transforming Canada from a country which a few years ago was almost wholly agricultural, to one in which the manufacturing interests are of great and growing importance."

In illustration of the truth of this statement it may be pointed out that in round figures the total value of industrial production, that is to say of manufactured products, increased from \$368,000,000 in 1890, to \$3,015,000,000 in 1917, or nearly 1000 per cent, an increase which one might seek far to find equalled. In 1913, manufactured products constituted 13 per cent of Canada's total exports; at the Armistice they constituted 42 per cent. For the first time the very great natural resources of the Dominion are being properly exploited. Our water-power is being utilized as it should, and the many inherent conditions which favour manufacture are being wisely made use of. Additional factors which have helped this expansion are the very recent exploitation of Western Canada, the general increase in the population, the development of our export

markets, particularly those fostered by our preferential tariffs, and lastly, but by no means least, the influx of foreign capital.

Attractions for Foreign Investor

It is inevitable that the exploitation of a new, exceedingly large country, such as Canada, rich in resources and under-populated, should attract the foreign investor; fortunately so, because in its first industrial expansion no country can supply its own financial needs.

Prior to the war, Germany, France and Great Britain supplied capital by the purchase of bonds and debentures. The United States, keenly alive to the future of Canadian development, were not slow to do more than this, namely, to establish in Canada a very great number of branch industries. It is, of course, the obvious and natural thing for them to do. Our resources, which are very similar to those of the Northern United States, are far less developed and will undoubtedly last very much longer—one has only to consider the timber situation in the States to-day—and in addition the establishment of a plant on the Canadian side of the line at once assures the American manufacturer, not only the benefits of our growing home market, but the enjoyment of our Inter-Empire preference.

In brief, the investment of European capital has been chiefly in banks, railways and public utilities; that of the United States in productive industries.

What then is the industrial situation in Canada to-day, as regards the capital by which it is being developed? To determine this point the Commercial Intelligence Service of the Department of Trade and Commerce examined the returns of the Industrial Census for the last fiscal year for which they were available, namely, 1918; that is to say, the statements of all companies in Canada, from those which own and exploit our natural resources, such as timber or minerals, to the smallest manufacturer of clothes-pegs or collar-buttons.

Ownership of Canadian Industrial Investment

In these returns the ownership of each bond and share of stock is stated. It was, therefore, possible to subdivide the total industrial investment in Canada into four groups,—that owned in Canada; that owned in the United States; that owned in Great Britain, and that owned elsewhere.

The result was found to be that 56 per cent was in the hands of Canadian investors, 35 per cent in the hands of United States investors, less than 9 per cent in Great Britain and about 1 per cent elsewhere. Similar analyses by specific groups of industries showed even more remarkable results.

The United States controlled from a comparatively small percentage of the flour industry, to more than 99 per cent of the artificial abrasive industry, an industry by no means small and of growing importance. Some of the actual figures were as follows: pulp and paper about 26%; agricultural implements, an industry which we prided ourselves as being peculiarly Canadian, 31%; electrical appliances 49%; meat packing 41%; rubber 51%; paints and varnish 47%; proprietary medicines 86%; car construction 59%; drugs and light chemicals 27%; condensed milk 40%; petroleum 53%; automobiles and automobile accessories about 70%.

The United Kingdom figures are comparatively insignificant. With the exception of the building and drug industries, in which Great Britain owns 45% and 37%, respectively, the British interest ranges from .04 to about 10%, and is as has been said, in total less than 9%.

In view of the development of the past two years, these 1918 figures are exceedingly conservative; for in 1919 and 1920, in Toronto alone, there were established forty-six new United States industries, four British and eighteen Canadian.*

Canada Controls Approximately 40%

It will probably be found, when the 1921 figures are available, that the percentage of our industrial capital controlled by the United States is not less than 50%; that by

Canada herself about 40%; and the balance divided between Great Britain and foreign countries. Canada may well be grateful to the United States for the part she has played in developing Canadian resources and industries. The foregoing figures speak for themselves. But as Mr. Pousette, Director of the Commercial Intelligence Service, points out in his introduction to the publication which we have under review, appreciation of our recent industrial history is not untinged with a regret that our own country, Great Britain, has not taken a more active part in our industrial expansion—that British manufacturers have not assumed a greater share of the responsibility and reward.

These briefly are the facts which prompted the Commercial Intelligence Service of the Department of Trade and Commerce to undertake the publication of "Canada as a Field for British Branch Industries." Investigation seems to show that the seeming indifference of the United Kingdom is in a large measure due to a lack of definite knowledge; to ignorance of Canadian conditions and opportunities.

British manufacturers know little of our present industrial development, less about our water-power and labour conditions, and in general seem to hold the idea that we are almost entirely an agricultural nation; an idea which has doubtless been accentuated by the widespread display of Western Canada posters and farming propaganda. It is true that many of the larger British industrialists know a great deal about Canada, probably more than many Canadians, but the smaller man, the average Midlands or north country manufacturers, seems to know little or nothing. It is not suggested that any manufacturer could enter Canada and carry on his business at a profit. There are some lines which no British manufacturer could successfully undertake, but that there are many which he might successfully undertake can hardly be disputed.

Outline of Economic and Industrial Conditions

"Canada as a Field for British Branch Industries" is therefore intended to present in concise yet comprehensive form an outline of economic and industrial conditions which affect Canadian manufacture.

It contains chapters on the economic areas of Canada; natural resources in their relation to industry; the history and present standing of Canadian trade; the labour situation in Canada; water-powers and their industrial importance; Canadian tariffs and trade agreements; railways, canals and shipping; company incorporation and taxation; and the Canadian banking system.

The appendices include a careful analysis of industrial capital in Canada, not only in total, but also by specific groups of industries, and an article, based on the experience of those British firms already manufacturing in Canada, on Canadian market conditions which affect the sale of British goods. It has been in preparation for more than six months.

This volume is designed to create in Great Britain a general interest regarding Canadian conditions and opportunities to suggest to the British manufacturer that if he will investigate the Canadian opportunities for his specific line, it will probably prove to his advantage. Publicity is being obtained through the Imperialist Press of Great Britain, through the offices and publications of the Canadian Government and Canadian Pacific Railways, and by direct distribution through the offices of the High Commissioner, the Agents General for the Provinces and the Canadian Government Trade Commissioners.

In addition copies have been sent to every Member of Parliament in Great Britain; to the Public Schools, Libraries and Universities; the Federation of British Industries, the Associated Chambers of Commerce of Great Britain; the British Empire Producers' Organization, and other industrial bodies.

*Report of Toronto Harbour Commission, 1920.

The Cascara Bark Industry

As the days lengthen, a little known but important crop to those interested is even now in its initial stages of fructification. This crop is neither fruit nor grain, but a product of the forest known as Cascara Bark. Once plentiful in the states of Oregon and Washington, these sources are becoming rapidly depleted, and British Columbia is now, in a commercial sense, the world's last source of supply.

From this bark is extracted the important drug, cascara sagrada, which forms the base of many laxatives. That the industry would be a lucrative one when developed along commercial lines, and that present efforts have only been of a scattered and primitive nature, may be gauged from the fact that during 1921 only some 31 tons of Cascara Bark were exported from the Port of Vancouver, but that this comparatively small quantity had a value of \$6,283 or over \$200 a ton. Whilst actual statistics are not available, there can be little doubt but that the New York and London markets could consume a very much larger tonnage than the above.

The Pacific coast, as far north as Prince Rupert, and as far east as the Fraser Valley and inland to the Flathead, supplied the bulk of this tonnage, most of which is gathered by farmers and homesteaders in the different localities where the graceful cascara tree is most abundant. The season for harvesting, commencing in the earliest days of spring, when the sap is flowing, does not interfere with the later activities of the sons of the soil.

As a source of income the industry, though of a temporary nature, is by no means to be despised. Even in pre-war days a good stripper could make from \$3.00 to \$5.00 per day, and at present prices the same man could double this sum by a fair day's work, always providing the location as to transportation, etc., was satisfactory. Moreover, a man need not be a capitalist to engage in the industry, a few dollars for the purchase of sacks and a peculiar loop-like knife for stripping being the sum total of the outlay.

Methods of Collection

The bark is at present mostly collected by Indians and Japanese, who strip it, dry it in the sun and ship it in sacks. This method is suicidal to the industry as, when all of its bark has been stripped, the tree inevitably dies. The proper way to collect the bark with due regard to the preservation of the tree and consequent conservation of the industry, is to remove it in strips well apart from each other, taking care not to take off a complete ring anywhere. In this way a quarter to one-third of the bark may be removed without unduly damaging the tree. Legislation to enforce proper method in this regard is

urgently needed in the best interests of the industry.

The tree is cultivated in Europe on a commercial scale, and it is possible that, as a side line to other crops, it might be made to pay well in British Columbia. By growing seedlings from the berries in small garden plots and transplanting them at the age of two years under a limited amount of orchard shade, the industry may be centralized at suitable locations, thus overcoming the commercial handicap due to the scattered distribution of the tree by nature in places inaccessible to transportation.

The pre-war selling price of cascara was \$110 per ton; in 1919 this had risen to \$220 per ton, and in 1920 it fell to \$200. To-day prices are distinctly firm and rising, as must necessarily be the case when the demand is large and the supply rapidly falling off.

Canadian Pulp and Paper Industry

The pulp and paper industry is rightly regarded as one of the most important of Canadian manufacturing industries, this being strikingly demonstrated by the figures for its operation during 1920, just issued by the Dominion Bureau of Statistics. The total capital investment is given as \$347,553,333, of which \$221,472,538 is in pulp and paper mills, \$103,659,445 in pulp mills, and \$22,421,350 in exclusively paper mills. This, it may be added, was considerably increased during the early months of 1921.

The total number of all mills is returned as 100, Quebec leading with 46, Ontario next with 37, the other provinces being represented as follows: British Columbia 6; Nova Scotia 6 and New Brunswick 5. Both as respects the number of mills and the capital investment, Quebec is the centre of the industry, the investment in that province being given as \$176,347,339. It has also the largest number of employees; the investment in other provinces was: Ontario \$109,169,597; British Columbia \$36,781,030; New Brunswick \$19,306,351; Nova Scotia, \$5,948,012. In the last two provinces, the investment is wholly in pulp mills.

Quebec has the largest number of pulp mills, 18; Ontario has 7; Nova Scotia 6; New Brunswick 5, and British Columbia 4. Ontario with 17 has the largest number of paper mills, all the others, 16, being in Quebec. Ontario has 13 combined pulp and papers, and Quebec 12, while British Columbia has 2.

The combined output of the pulp and paper mills during 1920 was valued at \$278,192,000, of which \$141,552,000 was in woodpulp and \$136,639,000 in paper. In the value of products, Quebec led with a total of \$131,822,753; Ontario is credited with \$113,415,866, and British Columbia with \$27,221,721.

Total Production of Woodpulp

The total production of woodpulp in 1920 was 1,960,102 tons, of which 1,201,881 tons were for use in Canada, valued at \$63,771,247, and 758,221 tons were for export, the value of the latter being \$77,781,615. Quebec produced 974,766 tons, valued at \$69,335,298, forty-five per cent of which was for export. Ontario produced 654,401 tons, valued at \$46,778,397, of which only about 30 per cent. was for export. British Columbia's production was 218,582 tons, valued at \$12,710,716, a third of which was for export. New Brunswick's production was 89,069 tons, valued at \$11,664,000, all but 6,700 tons being for other countries.

In the production of all paper products Ontario led with a total value of \$66,647,469, which represented 551,231 tons; Quebec came second with 485,705 tons, valued at \$62,487,455; British Columbia's production of paper was

147,289 tons, valued at \$14,505,007. To these three provinces the production of paper was practically confined.

In respect to newsprint production, Ontario held first place in 1920 with 380,943 tons, valued at \$32,677,706; Quebec was second with 358,185 tons, valued at \$35,889,425, the higher price secured for the smaller production being, doubtless, due to better contracts. British Columbia's production was 136,568 tons, valued at \$12,298,140.

In addition to her production of newsprint, Ontario produced in 1920, \$12,586,361 of writing paper; \$3,012,197 of wrapping; \$7,248,399 of boards, and \$4,122,800 of other paper products. Quebec's output of these was: writing paper \$9,282,446; wrapping paper \$7,740,947; boards \$5,656,263; other paper products \$3,918,374. The total value for all Canada of the different classes of paper products was: newsprint 875,696 tons, at \$80,656,271; writing paper, 73,196 tons, at \$21,868,807; wrapping 77,292 tons, at \$12,161,303; boards 158,041 tons, at \$12,904,062.

Employees and Wages

The number of employees in 1920 was 31,298, and the wages and salaries paid were \$45,253,898. Quebec had by far the largest number of workmen; 16,223, who drew \$21,305,463 in wages; Ontario had 10,071, who drew \$16,151,737; British Columbia 3,015, who drew \$5,617,123; New Brunswick 1,458, who drew \$1,846,775; while Nova Scotia mills employed but 528, with a wage bill of \$332,795. Of the total number of employees, 19,108 were in pulp and paper mills.

It is interesting to note that the total quantity of wood used in the industry during 1920 was 2,777,422 cords, of which 1,873,024 cords were spruce, the total cost of all wood at the mill being \$45,404,889. Quebec was the heaviest user with 1,333,815 cords, Ontario coming next with 942,672 cords. Next to spruce, balsam of fir was most used, hemlock, pine and poplar following in the order mentioned.

The pulp and paper industry is a striking example of the use of electrical energy. Of the 616,000 horse power actually used in the various mills of all Canada, no less than 455,000 was supplied either by hydraulic turbines, or by electrical motors, the former being credited with 269,221 horse power, the latter with 185,905. Quebec with 231,061 h.p. actually used in 1920, was the largest user of electrical energy, Ontario coming next with 139,373 h.p. It is worthy of note that of Quebec's 231,061 h.p. in actual use, 148,138 was actually supplied by hydraulic turbines.

As an indication of the rapid growth of this industry it may be pointed out that in 1917 the capital investment was only \$178,383,000, or about 50 per cent. of what it was three years later. At that time the number of employees was only 19,814, or about 17,500 below the 1920 figures.

Flour Milling Industry

Though it is gratifying to Canadians to learn that the Dominion has attained second place as a wheat producer among the wheat growing countries of the world with a production last season of approximately 329,835,300 bushels, a yet more pleasing feature is the fact that the tributary industry of grain milling maintains its premier place among Canadian manufacturing activities and that, making due allowance for the extraordinary demands for Canadian flour during the war period, the state of the export trade at the present time is in a satisfactory condition.

The rendering of so much of the Canadian wheat crop into flour before it leaves the country makes for greatly increased industrial activity and employment as well as greater crop revenue, phases which are also reflected in the export of the finished product. It is stated that at the present time only about one-tenth of the Cana-

dian wheat crop is ground into flour in the Dominion, which suggests at once the possibilities of the expansion of the industry.

Judged by the value of production, the flour milling industry ranks first among Canada's manufacturing activities though it assumes only seventh place in the amount of capital invested. At the industrial census of 1919, it was discovered that there were in Canada 1,255 flour mills with a daily capacity of 141,288 barrels. The total amount of capital invested in these plants was \$76,411,423; 7,371 persons found employment in their activities and were paid \$8,083,270. The total selling value of products was \$262,763,392, wheat flour accounting for about three quarters of the total amount. Of the mills 588 were in Ontario, 428 in Quebec, 49 in Alberta, 47 in Saskatchewan, 42 in New Brunswick, 38 each in Nova Scotia and Manitoba, 21 in Prince Edward Island and 4 in British Columbia. Since this census was taken there has been a not inconsiderable expansion of plants and capacity, so that these figures at the present time are subject to some elaboration.

The Domestic and Export Market

Though the annual capacity of Canadian flour mills is about 30,000,000 barrels of flour of all kinds, the domestic market consumes only about 8,000,000 barrels. The remainder is available for export and annually finds its way to, almost without exception, every country of the globe. The export trade in wheat flour is considerably augmented at the present time by reason of the wide favor it obtained during the war period, and though the exceedingly high demands of the years of hostilities have largely fallen off, export figures remain in great excess over pre-war figures and the expectation of exporters is that further increases will be noted in the future.

In the year 1909, exports of wheat flour from Canada totalled 1,738,038 barrels. In the following year they were 3,064,028 and steadily increased thereafter until reaching a total of 4,832,183 barrels in 1914. The increase was abnormal during the years of the war, reaching an aggregate of 9,931,148 barrels in 1918. A decline has been evidenced since that time. In 1920 exports totalled 8,863,068 barrels and in 1921, 6,017,032 barrels.

It is the general opinion that the inevitable falling off is at an end, the present satisfactory volume of exports more or less staple, and an increase in export figures to be looked for in the immediate future.

Quebec's Maple Sugar Industry

An industry which was not a war activity from any viewpoint but which the war stimulated and to which it gave increasing importance, was the peculiarly Canadian industry of the maple sugar manufacture. So limited is the area on the North American continent in which the

sugar maple flourishes that, previous to the war, vast sections of people on the other side of the Atlantic had never heard of maple sugar nor tasted this succulent dainty. The supplies sent over periodically to the Canadian army advertised it broadcast in a more effective manner than a studied and systematic campaign would have done and created a widespread demand for the product. This in turn administered a stimulus to the manufacturing industry such as it had never previously experienced and taxed the capacities of manufacturers to fill.

The maple sugar industry of Canada is confined to the provinces of Quebec, Ontario, Nova Scotia, and New Brunswick. Quebec is by far the heaviest producer with about 60,000 farmers engaged in the industry and accounting for seventy per cent of the Dominion output. Quebec is pre-eminently the maple sugar area of the continent. Only small amounts are produced in the other provinces whereas in Quebec the manufacture is an important industry, becoming more and more commercialized each year, and its importance is duly recognized by the provincial government which has framed legislation for its encouragement and protection. This recognition on the part of the government of the great possibilities of an export trade has resulted in a resumption in production on a substantial scale after the manufacture had signally declined, and more sugar and syrup is being produced now than ever in the history of Quebec.

Steadily Increasing Production

The earliest records of production show that in the decade 1851-1861 the average yearly output of maple sugar was about 13,500 pounds. From 1861 to 1871 it increased to about 17,500 pounds annually. A further increase was noted in the following decade, 1871 to 1881, when about 19,000 pounds per year were produced; and the zenith was reached between 1881 and 1891, when an average output of about 22,500 pounds per year was achieved. During the following ten years the yearly production fell to a little less than 20,000 pounds. Then the Government took the matter in hand, introduced modern methods, established schools for teaching these methods, and appointed inspectors to devote their time to visiting the maple sugar farms and assist the farmers with expert advice.

The result has been the establishment in Quebec province of the maple sugar industry on a firm commercial basis, its importance as such recognized and its various interests protected. Production is again steadily increasing and figures now surpass anything before recorded. In the past three years the output has increased threefold, and in 1921 Quebec's maple sugar output amounted to 30,000,000 pounds valued at approximately \$7,000,000. The industry is now one of some magnitude in which are engaged up-to-date business firms of initiative, bringing to it all the science of modern enterprise.

The increasing interest in, and demand for, maple products from points outside Canada is clearly indicated in rising export figures. In 1914, 1,925,343 pounds of maple sugar were exported from Canada, which had increased to 2,807,252 pounds by 1917 and to 3,551,789 pounds by 1918. Exports of maple syrup increased from 5,205 gallons in 1914 to 11,294 gallons in 1917. The effects of war advertising, which resulted in a strong European demand, is evidenced in more recent figures. Exports of maple sugar jumped from 4,005,124 pounds worth \$1,121,959 in 1920 to 7,999,233 pounds worth \$1,962,258 in 1921; and those of maple syrup from 9,270 gallons worth \$20,669 in 1920 to 11,254 gallons valued at \$31,767 in 1921.

Monopoly of the Export Trade

There is no reason for doubting that this increase in production will continue for the demand for maple products is bound to increase and Canada has a virtual monopoly of the industry, certainly of the export trade. And the opportunities for expanding the industry embrace a wide scope. Even at the present substantial rate of production it is estimated that not one half of the available sugar maple trees of Quebec province are made productive. It must

be borne in mind too, that the sugar maple flourishes generally on rough or stoney ground, such as is not adapted to tillage, and Quebec farmers are encouraged to make land, which is at the present time unproductive on account of its nature, revenue producing by the planting of maples.

A good deal remains to be done too, in utilizing the valuable by-products of the sugar and syrup. About sixteen quarts of sap will make a pound of sugar and the average yield of sugar is from two to three pounds per tree. Only the more modern and scientific makers, however, are extracting the by-products of maple vinegar and sugar sand. From the product of a thousand tapped trees, which is about the average Quebec grove, twenty-five to thirty gallons of very fine vinegar can be made from materials usually thrown away. Sugar sand, known also as nitre, a chemical of importance, is extracted from a sediment left in the evaporation of the liquid.

Industrial Growth in the Maritimes

Because the Maritime Provinces of Canada have largely settled into an existence of unruffled tranquillity and do not blazon forth periodically features of progressive growth, there may have been formed a conception that there is little progression there. But nothing is further from the truth.

A survey of industrial conditions in the Maritime Provinces covering the year 1919 has just been published. This shows a gratifying industrial situation and when compared with the figures of the two preceding years, illustrates a pleasing progress in manufacturing activities. The following tables for the three provinces are pithily illuminative of three years' progress.

NEW BRUNSWICK

	1917	1918	1919
Establishments.	1,423	1,363	1,439
Capital.	\$65,539,370	\$74,470,879	\$89,958,882
Employees.	21,363	19,888	24,210
Salaries and Wages.	\$13,882,446	\$14,247,388	\$18,923,023
Materials used.	\$33,333,090	\$34,513,640	\$53,471,290
Value of Production.	\$62,417,466	\$68,333,069	\$100,015,605

NOVA SCOTIA

	1917	1918	1919
Establishments.	2,147	2,125	2,249
Capital.	\$136,521,655	\$133,262,649	\$131,914,231
Employees.	31,396	34,557	28,105
Salaries and Wages	\$23,552,090	\$25,563,978	\$24,557,035
Materials Used.	\$109,736,731	\$93,540,657	\$76,928,099
Value of Production.	\$176,369,025	\$160,409,890	\$139,206,696

PRINCE EDWARD ISLAND

	1917	1918	1919
Establishments.	534	484	539
Capital.	\$2,652,374	\$2,886,662	\$2,867,035
Employees.	1,923	1,467	1,734
Salaries and Wages.	\$837,230	\$797,067	\$973,306
Materials Used.	\$3,402,485	\$3,547,800	\$4,269,843
Value of Production.	\$5,517,910	\$5,693,878	\$6,869,584

Industries turning out log products was easily first in New Brunswick, accounting for 249 establishments in 1919, capitalized at \$31,816,125 and a production for the year of \$26,713,403. Next in order were three cotton establishments capitalized at \$4,636,587, with an annual production of \$6,736,974. The pulp and paper industry was third in importance with five mills capitalized at \$11,960,778, realizing a yearly output valued at \$5,874,318.

Rolling mills and steel furnaces accounted for the greatest industrial activity in Nova Scotia, there being four such plants in operation in which a capital of \$20,339,234 was invested and whose annual production was \$31,362,000. A total of 486 establishments turned out log products, their capitalization totalling \$6,372,000 and their production \$8,331,824. Next in order were 264 fish preserving and curing establishments capitalized at \$3,828,517 and with a production of \$7,877,785. Thirty-seven ship-building and repair plants capitalized at \$6,732,419 accounted for a production in 1919 of \$7,663,072.

More Elevators Needed

An echo of the tremendous Canadian crop of 1921 which, diverted from the usual channels which took it across the border, rushed to Canadian, Atlantic and Pacific ports, taxing their capacities to the limit, is being heard in the demand for increased elevator accommodation. A new factor has entered into the situation giving Canada and Dominion ports greater control of the traffic and export of her own crop, and it is recognized that vastly increased storage space is going to be needed to accommodate future crops pending their shipping.

The consistent annual increases in the volume of Canada's grain crop has rendered imperative a corresponding yearly increase in elevator storage capacity, and each year sees new elevators dotting the grain growing provinces. At the last time statistics were taken, Canada had 3,775 elevators with an aggregate capacity of 214,279,964 bushels. The insistent demand at the present time is not at railway shipping points, but in the expectation of handling a greater proportion of Canadian grain at Canadian ports these termini are facing the need of greater storage space. Though 1921 was for Canada a record grain handling year, more traffic would have accrued to her could more have been handled, and on both the Atlantic and Pacific a certain amount of business had to be refused. It is in this direction that expansion is planned.

The Harbor Commissioners at Montreal are working on plans for a grain elevator of ten million bushels capacity which will be the most capacious in the world, outholding by half a million bushels that elevator at Port Arthur which at present holds the honor. The growth of the volume of grain in and out of the Port of Montreal has made the construction of more elevator space absolutely essential, as during the past year, which exceeded in activity anything Montreal has ever known, business had to be refused owing to lack of accommodation. The sudden effect of the United States tariff on Montreal traffic is revealed in the fact that it was considered that the present volume of grain traffic

would not be reached for fifteen years and the present capacity, 10,250,000 bushels, considered adequate.

Additional Grain Storage at Vancouver

Additional elevator accommodation is to be provided for the port of Vancouver during the year according to present plans. Here the need is serious, the present capacity of the port, 1,266,000 bushels, being inadequate and the capabilities of the port being severely strained in the past season.

Vancouver entered upon a new era of activity when it was discovered that grain could be shipped without injury via the Panama Canal route to Europe, and an ever-increasing proportion of the Prairie Provinces' crop is destined to go out in that way. It is expected that by the end of the season about four million bushels of wheat will have left Vancouver, and only the lack of elevator accommodation prevents the handling of a greater volume.

It is announced that another half million is to be added to Fort William's capacity, and even the 55,000,000 bushels accommodation of the Twin Ports is experiencing the strain of the lakes grain traffic on the way to the Atlantic. Vast stores of grain accumulate here during the rush season following the western harvest, and the congestion is relieved on the railroads by shipping the grain in specially constructed vessels across the lakes. A great volume of United States grain in the 1921 season reached Montreal by this route.

These items refer only to a somewhat extraordinary demand for terminal elevator accommodation brought about by sudden conditions. At the same time the ordinary increase of country elevators and interior elevators contiguous to the harvest fields, made necessary by the yearly swelling grain crop, is being met. And all this is making for increased activity in a hundred industrial lines in which this progress is reflected.

Outlook in Western Canada

*By John Sweeting, Industrial Agent, C.P.R.,
Winnipeg.*

The first two months of the present year have brought no abatement of the feeling of confidence that there will be a really satisfactory upward tendency in business conditions. One cannot speak of the existing situation as one of marked improvement, but in many lines of merchandise there is admittedly an increase in output, and reports generally are featuring a more optimistic viewpoint than hitherto has been the case.

It is a noticeable feature among rural and farming population that the gloomy outlook of last Fall has departed and a more confident tone is finding expression. This has been evident among the crowds of agriculturists who have gathered at the meetings held in connection with the Canadian Pacific Railway mixed farming special train which toured Alberta during February, travelling from the south of the province through to the most northerly point of Berwyn on the E. D. & B. C. Marked interest was noted in the various lectures and conferences as well as the hopeful outlook as to conditions expressed by those

present, and the demand which presented itself for the acquisition of pure bred and grade stock to improve existing dairy herds. The Alberta Government in conjunction with the Railway Company worked hard to make this special tour of interest and instruction, and it can be said that the results will be looked upon as one of the most successful that has hitherto been made.

The various trade, agricultural and live stock conventions held in the West during the month have shown full attendance, in addition to which winter sports carnivals such as that of Banff and Winnipeg have assisted in extending business and creating a demand for various lines that otherwise might have been dormant.

Pacific Coast Reports Encouraging

From the Pacific Coast reports are encouraging and give promise of a considerable amount of new development and new construction. Mining plants and machinery, piers and docks, public buildings and residences, and municipal improvements are slated for this year's program. The lumber industry is talked of as showing a better outlook with prospects of good export demand, with New Zealand asking for quotations on over 2,000,000 boxes for its export butter trade. The mining situation looks better with the Nelson and interior district expressing confidence as to the immediate outlook. There are also prospects of further development in pulp and paper plants, and many other industrial activities are under consideration.

In Alberta the report of the committee of investigation into conditions in the southern part of the Province has been published and while detailing many activities that should take place to put that territory under more scientific producing methods expresses no fear as to the ultimate success of farming conditions in view of the extreme fertility of the soil, when properly brought under water. A recommendation to continue construction of irrigation works was made, bringing the different areas under the ditch just as soon as immigration enables such areas to be properly farmed. At every point one sees the necessity of fostering immigration, the most vital question for settlement so far as the West is concerned to-day.

Saskatchewan is preparing for its annual agricultural developments; care will be taken to see that farmers needing assistance and seed will get it, and great areas should again be under cultivation. It is not likely that any very extensive building operations will take place, but there is a considerable amount of necessary municipal work to be carried out, residences to be built and much road construction as well as extension of rural telephone lines.

Forecast in Manitoba

In Manitoba work is continuous on the big power plant at Great Falls on the Winnipeg River. There appears to be a likelihood of considerable development in mining in the Elbow Lake territory, where the Hollinger interests have optioned the Murray claims and have already an outfit at work. The Commissioner of Northern Manitoba reports a very large number of enquiries in relation to that area and expects a considerable influx of mining men to continue investigations.

Applications are being made in Winnipeg and district for additional housing loans as many more residences are required, but just what the building program will be, it's hard to tell. Work is now being done on wage schedules for the ensuing season, and the result will be some factor in the ultimate program.

At the head of the Great Lakes, Fort William and Port Arthur, prospects are for construction of one or two lake boats, additions to existing terminal elevators and other works. Progress is being made in opening up the territory westward to the Manitoba boundary, a bid being made for settlers to develop some very good mixed farming areas.

It, therefore, looks probable and quite possible, that month by month the West will find an increasing trade and a reasonable amount of new development, and with the advent of good crop conditions, there would appear to be little reason to doubt that a satisfactory state of affairs can be reached before the year has ended.

Across Canada—Sydney

A Canadian city which achieves considerable publicity without very much effort on its own part is Sydney in Nova Scotia. Despite its apparent modesty its world importance thrusts its name each week before the newspaper readers of a continent, though probably few people have more than a glimmering idea of the place occupied by this Maritime city in the Canadian and world economic affairs.

The double city of North and South Sydney is situated off the mainland on Cape Breton Island, which possesses all the properties to augur for it a destiny of industrial importance second to no area on the American continent. Sydney is the centre and pivotal point of the island, and the many advantages and opportunities the city extends are deserving of being more widely known by manufacturers and others interested in industrial establishment.

The basis of the importance of Cape Breton Island lies in its coal deposits of which twelve billion tons are yet available, and, with the exception of a strictly limited deposit on the mainland of Nova Scotia, constitutes the only supply of bituminous coal in Canada east of Saskatchewan. These deposits, at the present rate of consumption, which is 5,000,000 tons per year, will last at least three hundred years. The presence of this coal has led to the establishment of a large iron and steel works and of a chemical plant, both the deposit and the steel works being the only ones on tidewater along the entire Atlantic coast of North and South America.

A Fine Land-locked Harbor

Combining with this valuable possession, Sydney has one of the finest of harbors with an area of twenty-five miles, land locked and easy of approach. Sydney, it is not generally known, is the nearest port on the North American continent to Europe, Africa and South America, and is consequently important in the marine world and a calling point for ships sailing to and from Canadian, United States, South American, and European or eastern ports. Shipping piers at Sydney accommodate the largest freighters afloat and coal may be shipped every day of the year. There are regular steamer connections with Montreal, Quebec, Halifax, Newfoundland, Prince Edward Island and other Canadian ports.

In addition to coal the area is dotted with deposits of other valuable minerals, largely unexploited, amongst them being iron, gypsum, fire clay, marble, limestone, dolomite and silica. The city is surrounded by excellent agricultural land to which it affords a splendid market, there being a special demand for garden truck and dairy produce. The waters about it contain prolific fisheries of great value which again enhance the importance of the city, which is the centre for the fishermen and their activities and constitutes

their market. Altogether there are more than 27,000 men employed in the industrial, mining and fisheries industries of the Sydney district who receive annually nearly \$25,000,000 in wages. The industrial capital invested in the district was estimated in 1917 at \$150,000,000, since which time it has increased substantially.

That Sydney has attracted considerable attention in the past decade is evident from the fact that its 1921 census population of 22,527 indicates an increase of twenty-seven per cent since the 1911 census. Sydney, with all its advantages, is deserving of being yet more widely known; when it is it will attract to it yet further industries to which it extends liberal inducements. There are opportunities for a wide range in manufacturing, more especially from iron and steel.

Canada's Child Immigrants

The value of a Canadian immigrant is largely estimated according to his economic worth on entry and the likelihood of his becoming an early revenue-producer. Accordingly, the important sections of immigration records are considered to be the statistics of adult entrants and the wealth they are possessed of at time of entry. This outlook attaches rather undue importance to the immediate present and does not give merited consideration to that greater building for the future. Thus the introduction of children, who possess the greatest possibilities of assimilation and citizen-making and are the greatest factors in the future development of the Dominion, is not generally considered the important feature it really is in the yearly immigration total, and there would be no such movement if it were not for certain charitable organizations to which it has been relegated.

In the British Isles there are thousands of children, sprung of good working class stock and possessed of fine qualities, who are growing up in depressing atmospheres and undesirable surroundings with prospects that are utterly hopeless, into a future that will not bear consideration. Many are orphans and others homeless from other unfortunate circumstances, all to be classed in their native country as superfluous and unwanted before they have attained the status of maturity. Inherently they are of the best citizenship material with infinite possibilities if taken in the pliable and plastic state. Their only salvation is to be taken from their discouraging environment and be permitted to develop their natural qualities in a newer, richer, ground. Canada offers to such bright prospects and the Dominion has need of such potential citizens.

First Party Arrived in 1869

The work of transplanting these children and setting them out in fresh soil has to a great extent fallen to certain benevolent societies, the Salvation Army, Dr. Barnado's Homes, the

Church of England Society and the Catholic Immigration Society, working under the supervision of the British and Canadian governments. The work has been in progress now some fifty years. The first organized party arrived at Quebec from Great Britain in 1869 and since then parties of healthy girls and boys have come to Canada every year, with the exception of two years during the war period. In this fifty-two years approximately seventy-three thousand children have come to Canada through agencies approved by both the British and Canadian governments.

The children, who at the time of entry may be of any age from three to eighteen, are all carefully selected by the agencies and approved by the regular immigration authorities. They must themselves declare a desire to emigrate, and no child is compelled to do so against his will. They are received in Canada at homes of the various agencies, and from there are sent out to foster parents or to situations on farms previously arranged. They are carefully supervised in their new homes, which are visited frequently and unexpectedly by government inspectors, and should there be any dissatisfaction on the part of the child, his foster parents or employers, he is sent back to a receiving home until other satisfactory arrangements can be made.

Many Have Attained Outstanding Success

Whilst the younger children usually go to foster parents, the older youths and maidens are apprenticed as farm laborers or domestic servants. As is to be expected from such unpromising beginnings, these children are largely to be found among the humbler walks of life in Canada, though it is significant to note that in the history of the movement there is no record of even one child becoming a public charge. An indication of what a creditable reputation these juvenile settlers have made in Canada may be taken from the fact that whilst only 33,617 have come to the Dominion in the past ten years, there have been in the same period, 448,289 applications from people anxious to either adopt or employ these wards.

Fully seventy-five per cent of the boys have remained in agricultural life and many are prosperous farmers. The girls have, without exception, proved valuable citizens and many have married men prominent in Canadian life. There are several successful clergymen, doctors, lawyers, merchants, school teachers, etc., who made their first appearance in Canada under the auspices of a benevolent society, and it is noteworthy that ten thousand of these former immigrant boys enlisted in the Canadian army, many making the supreme sacrifice and those who survived winning a wide variety of honors, including the V.C.

In view of the splendid results already achieved, and the thousands of fine citizens

Canada has added to her population in this manner, it is gratifying to know that the work is still continuing and the Dominion building to that great future she looks to. It is a praise-worthy movement from all aspects, working to mutual benefit, and Canada could have no sturdier or more loyal citizens in the years to come than the immigrant children of the British Isles who arrive to-day.

Selling an Empire

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Enough land to support a nation of men, women and children, to grow millions of bushels of grain, to raise countless herds of cattle; enough land to make a good-sized country—28,000,000 acres in all—that is what the Canadian Government gave to a corporation of a few men, the nucleus of the Canadian Pacific Railway, 40 years ago. Virgin prairie and forest primeval it was, at the time of the gift; except for the trapper and the hunter, a country without human beings, a world of mystery over which the Hudson's Bay Company alone had held sway. Now, thousands of people are taking possession of it, are turning its fields yellow with wheat, are making it famous for its cattle and horses, are covering it with their homes and their hopes.

The Canadian Government gave the land to this corporation of a few men that it might be made ready for the occupancy of the people of the world; and to describe the way in which this is being accomplished is to tell the story of the most remarkable population movement known to history.

Statistical statements embodied in the annual reports of the Canadian Pacific Railway include figures relating to the land grants which are not only interesting, as showing clearly the development of the country, but are very suggestive of the important nature of the work transacted by the company's land department. It is evident that the administration and disposal of upwards of 28,000,000 acres of land involve considerations that undoubtedly affect the well-being, not only of the shareholders of the road, but also of every man, woman and child whose future is concerned with the up-building of Western Canada.

Company Given Land in 1880

The original land grant of the company for the construction of the transcontinental railway from Montreal to the Pacific Ocean was 25,000,000 acres of land fairly fit for settlement, to be selected in a belt 24 miles wide on each side of the main line from Winnipeg to the Rocky Mountains. Any deficiency in the area was to be taken from blocks of land outside the main line belt set apart for that purpose. The company's charter covering this agreement was dated 1880, and subsequently the company earned additional lands by the construction of branch lines.

It is now more than 40 years ago, or, to be exact, on the 21st of Sept., 1881, that the first sale of land was put through the books of the department. From that day to this, the administration of the department shows a record of unrelenting endeavor to work out the great problem of the country's future in a way that would ensure the very best results to all concerned.

The year 1881 was an eventful period in the history of Western Canada, as it was then that the attention of the world was first attracted to the western prairies by the building of the Canadian Pacific. In the real estate boom which specially marked that period there is no doubt that, had the management of the railway company so desired, they might then and there have easily realized large sums of money by disposing of vast areas of their land grant to eager speculators. It is well known, however, that they did nothing of the kind, but, instead, inaugurated the policy which has ever since been maintained, of disposing of

the lands in such a way as to ensure, as far as they could, the settlement and development of the country.

In accordance with this policy the lands were put on the market at a flat price of \$2.50 per acre, and sold exclusively under settlement conditions which provided for the breaking and cultivation of half the area sold under each contract. Having thus done what they could to ensure the purchase of the lands by actual settlers, the company, through its land department, from this foundation built up, step by step, the masterly, patriotic and at the same time business-like policy which has at once served the best interests of Western Canada, and has at the same time, from the company's point of view, got the very best results from the land grants.

West Gets First Railroad

The year 1882 saw the commencement of a long period of depression which seriously affected every business interest of the country, and which must have been a time of special anxiety to the officials of the Canadian Pacific Railway. They knew, of course, that so far as the agricultural resources of the country were concerned, a setback of this kind would be only a temporary one. By combining true consideration for the interests of the settlers with a due regard for the rights of the company, they tided over the bad years and enabled every farmer settled upon Canadian Pacific land, who made any effort at all, to gradually improve his position and finally reap the reward which was in store for him when the good times returned. It was in 1887 that a good crop, combined with improved financial conditions, restored general confidence in the country, and from that date onwards, so far as crops have been concerned, the results have been most satisfactory.

But this does not mean that it was all smooth sailing in the administration of the company's lands. There was, for instance, the period when the price of wheat went down to the lowest figure on record, and when the land department accepted wheat in settlement of deferred payments under its land contracts, giving credit to its purchasers' accounts at 50c a bushel, when the market price of wheat went as low as 37c.

Money Advanced for Taxes

There were times, too, when, owing to the low price of wheat, or for local reasons, which specially affected certain districts, the settlers were utterly unable not only to make any payment to the company on account of their lands, but could not even settle their taxes. Some of the municipalities were very seriously affected financially on this account. The company carried over the payments due them, and from time to time advanced on its purchasers' accounts very large sums in settlement of taxes. Later on, as the country developed and new districts were opened up, the land department inaugurated extensive systems of advertising the country, and by agency arrangements all over the world brought very large numbers of desirable settlers.

Under the auspices of the department, various colonies were formed in different sections of the country, and during their earlier stages were nursed along and finally have become the centres of very prosperous settlements. During all these various periods, the company has disposed of its land under terms and conditions which seemed to be suitable to the times, and which were calculated to produce the best results. When the time appeared to be ripe, the company contributed largely to the tremendous influx of the last 20 years by interesting several large colonization organizations in Western Canada. Tracts of land were sold at low rates, obtaining for Western Canada the benefit of the machinery which had been largely instrumental in settling up the northwest states.

Regulation of Land Prices

There is one feature of the policy of the company which calls for special reference, and that is, the system which has been followed in pricing land, and the regulations under

which the lands have been disposed. The policy in these regards had a very considerable effect on the welfare of the country from the point of view of speculation, as it affects permanent and beneficial settlement and development. In this respect it may be said that the Canadian Pacific Railway Company has many times, at periods of undue land excitement, acted as a safety valve, and has been able to safeguard the best interests of the country.

Controlling a vast area of land, all of which is suitable for settlement, the officials of the land department, by carefully watching the signs of the times, and by following closely their well-marked plan of building up agricultural communities, have been in a position to see when the limit of legitimate speculation has been reached, and have, without working any hardship to anyone, and without putting any obstacle in the way of desirable investment, been able in a very large measure to direct the land business of the whole country into proper channels.

Towns Spring Up Along Lines

In other ways, too, the company has been busy building up the commercial and agricultural prosperity of the west. Notably may be cited the establishment and administration of the townsites along the lines of the Canadian Pacific Railway and branches—the market towns at which the farmer disposes of his produce and obtains his supplies—and the scores of prosperous and commercial centres which cluster around the railway stations are eloquent witnesses in this regard. One special work of great importance which must be mentioned is the irrigation project in Alberta. It is the largest individual irrigation undertaking on the American continent and serves a territory stretching about 150 miles east from Calgary along the main line of the Canadian Pacific Railway, and lying between the Bow River on the south and the Red River on the north. It is a district suitable to irrigation, and the aim of the company in developing it was not to make a big profit out of the project, but to create an immensely rich and productive community which would be a great benefit to the country and furnish traffic for the railway.

In 1912 the Department of Natural Resources was formed and took over, amongst other things, the administration of the company's lands and the direction of development and colonization. A period of great activity ensued, resulting in a tremendous increase of the business of the land department and in the settlement of the country.

To encourage colonization by desirable settlers, various new plans were inaugurated, including preparation of ready-made farms, intended primarily for British settlers, loans to selected settlers from the south, advances of pure-bred stock, and, later on, when the overseas men began to return, provision for soldier settlement. During the extraordinary development which this period has witnessed, vast areas have been settled, towns by the score have sprung up in all directions and everything that would tend to encourage the movement has received the valuable aid of the Canadian Pacific Railway Company.

Ultimately, a new department was formed called "The Department of Development and Colonization," which has had charge of all matters pertaining to colonization and industrial development of the west, and of late years, most of the important features of the great movement in Western Canada have been initiated and carried to completion by this Department.

In promoting all these undertakings, and in carrying on the land business and the immigration business of the company, the Department has necessarily been, more or less, in constant touch with a large majority of those who are building up the farming industry and the commercial business of the great west, and it is quite within the truth to say that the verdict of all who know anything of the matter is that fair treatment and business-like consideration have at all stages marked the attitude of the company in their dealings with the land-seeking and land-developing public.

Mining Activity in Manitoba

After the slump experienced in the Canadian mining industry in 1921 it is gratifying to observe on all sides a resumption of accustomed movement. Whilst this promise is fairly general all over the Dominion it is most pronounced in Northern Manitoba, Canada's newest mining field and one of its potentially greatest, and mining men are convinced from indications that this section is about to experience a season of activity previously unreachd. This is not a boom in the wild-cat sense but activity fully justified by developments, discoveries, and the capital which is going into the district.

Le Pas, Northern Manitoba's capital and the gateway to the great mineral fields, has been a seething hive of bustle and stir since the opening of the new year as prospectors and representatives of mining companies arrived and departed. Racing teams have been utilized for taking prospectors and prospective stakers out to Elbow Lake and other districts, whilst dog teams are continually bringing back men anxious to record their claims as rapidly as possible and hasten back to watch developments. As many as seven dog teams have left in a single day. In the month of December alone seventy-eight claims were recorded at the Lands' Office at Le Pas, and the early indications were that January's figures would exceed those of the previous month.

Influences Contributing to Development

Several factors have contributed to bringing about this new interest and development in the Northern Manitoba field. First amongst them is perhaps the action of the influential Hollinger interests of Ontario in taking over the Murray claims at Elbow Lake, which resulted in a marked impetus to staking in that district. The Montreal engineer who secured the claims for the Hollinger interests stated that the find of the Murray Brothers was important, and that if it would average, it was the greatest thing he knew of.

Reports of several new important finds in Northern Manitoba have added to the excitement prevailing and the most influential interests are investigating and staking. Among those to stake claims recently were representatives of the Tonopah Company and the London Exploration Company. Meanwhile Canadian promoters in England have encountered a confidence in the Manitoba field and met with a gratifying success in securing the necessary capital for development. According to all reports from across the Atlantic this winter a substantial amount of money is expected to be brought into Manitoba in the spring.

Canada's Fisheries in 1921

Fisheries in the waters off both coasts of Canada in 1921 produced a revenue of \$18,866,062 as compared with \$26,857,952 in the pre-

vious year. Several causes combined to effect this slump in the Dominion's fisheries' revenue, possibly the most pronounced of which was the falling off of a large part of the demand for Canadian fish which had been created purely by war-time conditions. The drop in the market price of the product also had considerable effect in reducing revenue, whilst the Fordney Tariff, impending for some months, was felt in general discouragement. Fishermen seeing this outlet largely closed slackened their efforts accordingly, having no assurance of a market for their catch.

British Columbia continued to lead the provinces of Canada in the matter of value of sea fisheries with a revenue of \$8,359,026. Nova Scotia at the other extremity of the continent took second place with a value of \$6,738,309. The value of the New Brunswick sea fisheries was \$2,073,615; Quebec accounted for \$1,244,704; and Prince Edward Island \$451,408.

Varieties and Values

Salmon continued to maintain a healthy lead as Canada's greatest fish revenue producer, accounting for a total value of \$5,040,022. Cod was next with \$3,554,130; halibut accounted for \$3,403,936, and lobsters for \$2,962,487. The only other fish to exceed the million dollar mark was the herring with \$1,098,681. Mackerel produced a revenue of \$776,960; smelts \$713,660; haddock \$436,701; hake and cusk \$113,552, and oysters \$92,977.

British Columbia's most valuable fish was naturally the salmon with a revenue to the province of \$4,412,239, followed by halibut with \$2,996,242. Cod led in Nova Scotia with a value of \$2,614,257, followed by \$2,076,032 for lobsters. Quebec's first fish is the cod with a value of \$631,933 and, second, salmon \$157,028. Smelts and lobsters were nearly equal in New Brunswick with a value of \$522,016 and \$513,556 respectively. The first revenue producer among Prince Edward Island's fish is the crab with an annual revenue of \$228,926.

Canada's Fisheries Sound

In her fisheries, comprising the waters off both her coasts, and the vast aggregate area of inland lakes, rivers, and streams, Canada possesses a prolific and permanent source of wealth and one of the greatest food resources of the British Empire. No resource has greater or more lasting value; none can be exploited so easily or so profitably; and none merits greater attention at the hands of the Canadian people. It is perfectly clear, however, that all that might be done to increase the development of this almost limitless resource is not being undertaken, and this has to be explained to account for what is undeniably a decline in the fish catch of 1921 when compared with previous years. With the exception of the salmon packers of British Columbia, fish producers are making little effort to establish themselves on foreign markets, relying on chance orders, and very often losing out to competitors. On the other hand the Canadian public is consuming a great deal of foreign fish which more aggressive foreign packers have managed to insert in the Canadian market.

In the years gone by, since, in fact, the days of Confederation, when a beginning was made in keeping accurate fish statistics, with extending exploitation, a growing home consumption, and expanding foreign markets, the Canadian fishing industry experienced a steady rise in production and accounted each year for a substantially greater revenue than in each preceding twelve months. This consistent trend upwards reached its peak during the war years, due to an unprecedented demand which in turn was followed by exceptional efforts on the part of fishermen and packers. The end of the war found a falling off in certain of the export markets developed and the industry suffering from over-equipment of fleets and plants, acquired under the delusion that the extraordinary wartime prosperity would last indefinitely.

The Need for a Campaign

The crying need of Canada's fish industry at the present time is for an aggressive campaign abroad to develop wider and newer export markets together with the encouragement of greater home consumption of the domestic product, to the exclusion of foreign goods. There is no doubt but that this alone is needed to rectify a situation brought about by a sudden disorganization of the industry resulting from the sudden cessation of war demand together with the general upheaval which has existed in foreign trade relations. The situation is purely temporary; the industry is sound and will resume its progress in adding yearly increments to this valuable resource of Canadian revenue.

Of equal or greater importance to the development of markets is the need for wise and sound legislation for the conservation of the fish in Canadian waters, their adequate protection during the breeding seasons and the retention of their spawning grounds and the channels of access to them.

The fish catch of the year 1921 amounted in value to \$49,521,217, and indications are that the value for 1921, when published, will disclose a substantial falling off. Taking only the sea fish catch on both coasts for the first nine months of the year, there was a decline for the period of from \$22,171,371 to \$14,517,344. This in spite of the fact that the season was in many respects a splendid one, with exceptional possibilities. But fishermen in some cases did not go out, or returned with less than a full catch, when they found there was no prospect of disposing of all that they caught. The year's catch in 1919 amounted in value to \$56,485,579 and in 1918 to \$60,250,544, which was the Dominion's record year. The value of the total catch in 1900 was \$21,557,639 and millions were added yearly as the industry expanded, up to 1918.

Export Pinnacle Reached in 1920

Canadian exports of fish and fish products reached their pinnacle in 1920 when their value attained an aggregate of \$40,976,747. In the fiscal year 1921 they dropped to \$33,330,364. In 1916 they were only \$22,377,977 and in 1904 only \$10,759,029. In the four months ending July 31st, 1921, fish exports amounted to \$8,041,012 as against \$9,387,315 in 1920 and \$9,654,812 in 1919. This represents, in the same proportion, a decline of about \$4,040,000 in the total export trade for the year. Glancing over the list of Canadian fish exports they would appear to penetrate to many parts of the world, the United States and the United Kingdom being the heaviest importers, whilst all varieties of fish found in Canadian waters seems to stand high in popular favor.

There is nothing wrong with the Canadian fishing industry but an urgent need for an aggressive campaign to develop new markets for the increased production war demands have brought about. Many weeks the survey of markets published by the Department of Trade and Commerce publishes the names of firms in foreign countries desirous of securing the Canadian fish product, and which are apparently overlooked. The Fordney Tariff Bill threatens to seriously curtail Canada's most profitable market, and with the same foresight displayed in other

lines of Canadian exports, markets must be found and developed abroad. Canadian fish has made its name on the world's markets, is in general favor, and it is only necessary to keep it prominently before dealers.

Timber in the Northwest Territories

The increasing penetration of agricultural settlement, the extension of the trapping field, and perhaps above all the discovery of oil and valuable minerals in the area, inducing more exhaustive exploration, have made the sub-Arctic north of Canada more generally known and have revealed resources not previously known or widened the limited knowledge as to their extent. One of the resources of this great area of which little is generally known is its timber wealth. This, according to the *Canadian Forestry Magazine*, is sufficient to supply the country for a number of years. Up to well within the Arctic circle, where they dwindle in size, are to be found quantities of spruce, tamarac, jackpine, poplar, larch, birch and willow, all of good size and in commercial quantities.

In the Mackenzie district, white and black spruce attain a height of eighty to one hundred feet, and in a majority of cases these are straight and furnish at least two logs to a tree of good size. Below Fort Smith during the summer of 1921, in an area of about a square mile, two hundred logs were cut, averaging forty feet long and ten to eighteen inches in diameter. Spruce is found in scattered groups, but the clumps are generally large, annual rings numbering one hundred being quite common. White spruce attains its full size in the valleys especially. The lower half of the Slave River is thickly wooded in this respect.

Great Areas of Jackpine

In view of the mooted schemes of utilizing the jackpine for the manufacture of paper pulp, the resources of this tree in the Northwest Territories are interesting as adding substantially to the valuable resources of pulpwood in the provinces to the south. The jackpine is very prolific in this area and entire blocks of it are to be found in the Mackenzie district. When the Prairie Provinces are called upon to supply pulpwood for Canadian paper production, this northern section will be in a position to supplement the supply.

The principal tree encountered is the poplar, which constitutes entire forests in many sections of the Territories and is found elsewhere in conjunction with other trees. The balsam poplar inhabits the entire length of the Mackenzie waterways, assuming its greatest size on the Athabasca, Slave, Peace and Liard rivers. As this is the tree constituting the Prairie Provinces' main reserve supply of pulpwood, the northern addition will some day have value. At present it is used extensively in the building of log dwellings, and is admirably adapted for fuel.

Another tree of the region of considerable present economic value is the tamarac, which is found in the swamps and muskegs and is used extensively in the keels of boats, etc. Hardwoods are extremely scarce in the Territories with the exception of birch which is found fairly generally.

Exploration of the north has dispelled another illusion, that of a treeless desert. Not only is the valuable timber supply this region possesses of present convenience to settlement and industrial enterprise, but, if protected adequately, constitutes a rich reserve against the time when the demand for more raw material for paper manufacture takes manufacturers to the West.

Canada's Population

The total population of Canada in the census of 1921, according to figures issued by the Dominion government, is 8,769,489 as compared with 7,206,643 in the census of 1911, an increase of 1,562,846 for the ten years, or nearly twenty-two per cent. All the provinces of the Dominion exhibit increases with the exception of Prince Edward Island, the Yukon and the Northwest Territories, whose decreases are explained by circumstances and conditions. The growth of population is especially marked in the West, the Prairie Provinces and British Columbia having together added nearly one half to their numbers.

Ontario is the most populous province of Canada with a population of 2,929,054, followed fairly closely by Quebec with 2,349,067. Saskatchewan follows with 761,390; Manitoba 613,000; Alberta 581,995; Nova Scotia 523,837; British Columbia 523,353; New Brunswick 387,839; Prince Edward Island 88,615; Northwest Territories 6,684; and the Yukon 4,162. The province of Saskatchewan shows the greatest proportional increase in population since the taking of the last census with an addition of 80 per cent. Alberta grew by 55 per cent; Manitoba 34½ per cent; British Columbia 33 per cent; Quebec 17 per cent; Ontario 10 per cent; New Brunswick 10 per cent and Nova Scotia 6½ per cent. The Northwest Territories returned a decline in population of 63½ per cent; the Yukon 51 per cent and Prince Edward Island 5½ per cent.

A Shifting of Boundaries

The declines in certain areas are readily explainable and were expected. Since the beginning of the century the production of gold in the Yukon, which constituted the main and virtually sole industry of that territory, has been dwindling, and the producing area of Canada has now shifted from the Yukon to Northern Ontario. A migration of population accompanied the slow death of the industry, which had its effects in registering such a serious

decline in the number of people in the territory. It is probable, however, that few of these people were lost to the Dominion and that the majority settled in the provinces further south, and helped to swell their totals at this census.

The severe decline in the Northwest Territories seems difficult to credit or account for until it is recollected that on May 15th, 1912, one year after the previous census, a greater Manitoba came into existence with its previous narrow boundaries stretched until they embraced Hudson's Bay. This took into provincial jurisdiction the richer, more productive and populous part of the Territories, so that its population at this census went to swell the total of Manitoba's people and assisted in giving the provinces such a percentage of increase.

Population Moving Westward

Prince Edward Island shows a small decline and the other Maritime provinces the smallest increases of population in the Dominion. This is partially accounted for in the fact that there is a constant movement of substantial volume from the older East to the newer West which annually depletes the Maritime population to build up another section of the country. It is to be feared, however, that a portion of the lost population were those drawn away by the United States in its period of extraordinary war-time industrial prosperity.

The census of 1921 goes to show that the weight of population in Canada is moving westwards with the opening for settlement of new areas and the general development of the territory west of the Great Lakes. In 1871 there were only 109,475 inhabitants out of a total population of 3,689,257 in the Dominion. In 1881 there were 168,165 out of a total population of 4,324,810. In 1891 the number of inhabitants of the western half of Canada had doubled since the previous census and there was a population west of the Great Lakes of 339,646 out of 4,833,239 in all Canada. In 1901 the western provinces and territories numbered 645,517 people out of Canada's total of 5,371,415. In 1911 Western Canada had 1,742,182 people, approximately 24 per cent of the Dominion population, and according to the 1921 census they have 2,490,592 inhabitants or approximately 28 per cent of all Canada's people. In the past decade the combined population of Manitoba, Saskatchewan, Alberta and British Columbia has increased from 1,645,189 to 2,419,746, or by more than 47 per cent.

A Healthy Increase

Twenty-two per cent is a fairly healthy rate of increase for a decade when it is considered that for half this time Canada was enthralled in the affairs of war and emerged to become involved in solving the serious problems of the aftermath. The flower of the Canadian Army did not return from overseas; immigration from overseas during the period of hostilities was impracticable and none were added to her population in this wise; in the tense economic situation which developed after the war, it was considered wise to seriously limit the entry of new citizens who were beginning again to clamor at her gates. All these factors have worked against population increase. The average increase of births over deaths in Canada is in the average year something less than 100,000. Canada's main agent in population building has been her immigration tide. This amounted in volume in the years between the taking of the last census and 1914 to between 300,000 and 400,000 per year. It virtually stopped during the war, and in 1921, under the policy of limitation in force since its conclusion, aggregated only 100,000. Population building in the decade has been uphill work and twenty-two per cent may be considered a good achievement.

Motion Picture Films

A print of each of the following films issued by this department is deposited with the representatives listed on the back page. These are available upon application for use by schools, theatres, clubs, societies, boards of trade, and other associations and organizations.

Homemaking by Irrigation.—Irrigation farming in Southern Alberta, the various operations and their results.

The Land of Promise.—Featuring the well-known agricultural section of Battleford, Saskatchewan.

Opportunity.—Illustrative of Western Canadian opportunity, more specifically in the district of Lloydminster, Alta.

Livestock and Dairying.—The fine status and remarkable progress of this industry in Western Canada picturized.

Taming the Last West.—Depicting the evolution of the Canadian West from buffalo range to a modern agricultural area.

The Sunny Side of Rural Life.—The farmer on holiday, showing that life in Western Canada is not all work.

The Evolution of a Grain of Wheat.—The life of wheat seed from the time it is sown until its progeny enters into the composition of a loaf of bread.

Apple Growing in Evangeline's Land.—Orchard cult in the region Longfellow's poem made famous.

The Apple Harvest of the Okanagan.—Gathering and shipping apples in the beautiful British Columbia valley.

Curing Fish in Nova Scotia.—Depicting the various phases of curing and smoking fish in the Maritimes.

The Canadian Sardine.—The sardine caught, canned and distributed.

Some Water Powers of Eastern Canada.—The beautiful and powerful waterpowers of the Eastern Canadian provinces.

The Silver Fox Industry of Canada.—The domestic ranching of silver foxes in Prince Edward Island.

New Homes Within the Empire.—The camera follows the progress of a British immigrant from the first awakened interest in Canada till when he settles on a Western farm.

Departmental Publications

Any of the following publications will be sent free on request.

The Prairie Provinces of Canada.—A descriptive statistical booklet on the provinces of Alberta, Saskatchewan and Manitoba, with full information on the opportunities for farming in the West.

Business and Industrial Opportunities in Western Canada.—Full listings of industries existing and business openings in the provinces of Western Ontario, Manitoba, Saskatchewan, Alberta and British Columbia.

Why Canada.—Reliable and comprehensive information for the United States manufacturer, showing the advantages of establishing his industry in Canada.

Canada's System of Government.—Canadian government briefly outlined to portray its democratic traits.

The Story of Canadian Nickel.—History of the nickel mining industry.

Canadian Oil Exploitation and Prospects.—An expert engineer's history of Canadian oil development and future possibilities.

Canadian Water Power Development.—Authoritative and exhaustive survey of water power reserves and possible development.

Education in Canada.—The wide scope of Canadian education depicted to show that a settler need have no apprehension in this regard.

A Canadian Grain Handling Plant.—How Canadian grain is stored and shipped. Authoritative article on Canadian elevators.

Value of a Settler to Canadian Railroads.—Computation from reliable statistics of a farming settler's revenue-producing worth to Canadian railroads.

Bituminous Sands of the Athabasca Region.—Description with known values, and possibilities of development of the widely known tar sands of Northern Alberta.

The New Canadian Oil Field.—Dealing with the Arctic oil region of the new strike.

Water Powers of the Maritimes.—Authoritative article on the undeveloped power systems of the Eastern provinces.

Water Powers of Manitoba.—The water powers of this province dealt with exhaustively.

Oleomargarine.—History of oleomargarine in Canada and its future prospects.

Synopses of Natural Resources.—Forty-five pamphlets dealing briefly but concisely with Kaolin or China Clay, Oil Shales, Mica, Fluor-spar, Asbestos, Molybdenum, Magnesite, Fruit, Flax Fibre, Nickel, Coal, Clays, Salt, Copper, Zinc, Silver, Gold, Pyrites, Iron, Potash, Talc, Feldspar, Platinum, Phosphate (apatite), Manganese, Graphite, Cement, Barytes, Gypsum, Irrigation, Petroleum and Natural Gas, Corundum, Sulphates of Sodium and Magnesium, Timber and Pulpwood, Fish, Fur, Peat, Grazing Lands, Mineral Waters, Building and Ornamental Stone, Whaling, Sealing, Wheat, Oats and Barley, and Water Powers.

The Department of Colonization and Development

The Department of Colonization and Development has the following offices established in the United States, Great Britain and Europe, whose representatives, at any time, will be glad to furnish information regarding Canadian agricultural, industrial and commercial enterprises.

MONTREAL, P.Q.	H. C. P. CRESSWELL, Supt., 335 Windsor St. Station.
WINNIPEG, Man.	J. F. SWEETING, Industrial Agent, Canadian Pacific Railway.
CALGARY, Alta.	M. E. THORNTON, Supt. U. S. Agencies, Ninth Ave. and First St. East.
VANCOUVER, B.C.	E. J. SEMMENS, Travelling Industrial Agent, Canadian Pacific Railway.
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or any agent of the Canadian Pacific Railway Company or Canadian Pacific Steamships, Ltd. in United States, Great Britain, or Europe.

J. S. DENNIS, CHIEF COMMISSIONER,
Department of Colonization and Development,
Canadian Pacific Railway Company,

Ask the Canadian Pacific about Canada



Agricultural and Industrial Progress in Canada

A monthly review of Agricultural and Industrial progress in Canada, published by the Department of Colonization and Development of the Canadian Pacific Railway at Montreal, Canada.

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MONTREAL

April, 1922

Forest Conservation

WHILE there is much to be done in regard to forest conservation in Canada, the progress that has been made in the past few years has been gratifying. There are now four forest schools connected with Canadian Universities, and forest experimental stations have been established in different parts of Canada to study the best methods of forest reproduction.

According to the *Canadian Forestry Magazine*, last season, in addition to protecting the forests by means of hundreds of patrolmen on foot, in canoes, in motor boats and on railway velocipedes, airplanes were employed for protection in no less than five provinces, and in addition, no less than 2000 miles of telephone wires have been strung.

For the better utilization of forest products there have also been established under the Department of the Interior, Forest Production Laboratories where all problems connected with the manufacture of every kind of forest products are studied and the result made available to the people of Canada.

A great change has also taken place in the attitude of people generally towards forest protection, and through warning notices placed in the dining-cars of railway trains, camps, on trees in Dominion Parks and other public places, they have been fully informed of the enormous waste through forest fires and are co-operating in endeavor to keep them to the utmost minimum.

If fires had been kept out of Canada's forests for the past century, we might have cut all the timber that has been cut in that time and still have as much timber standing as when Con-

federation was brought in—in other words, the annual growth is estimated to have been as great as the annual cut; but because the annual growth has not been as great as the annual cut *plus* the fire losses, the forests have been deteriorating.

The remedy, it is clear, is to reduce forest fires, and start new forests on non-agricultural lands.

Canadian forests have demonstrated wonderful recuperative powers, and if these powers were assisted by natural and artificial seeding, the tide would soon be turned and the annual growth increased to a point where it would exceed the annual cut.

The need for action is not because Canada is in the midst of a timber famine now, but because it takes a tree half a century or more to reach a merchantable size.

In carrying out reforestation in the British Isles, the Forestry Commission is depending chiefly on Canada for tree seeds. The collection, threshing and shipping of these seeds is done

by the Forestry Branch of the Department of the Interior. The threshing and cleaning is carried out at a very efficient plant at New Westminster, British Columbia.

Late last year, a shipment of 3,000 pounds was made, evenly divided between Douglas fir and Sitka spruce seed. Recently, a second shipment was sent overseas consisting of 1,800 pounds Douglas fir, 1,500 pounds Sitka spruce and 100 pounds western hemlock seed.

A third shipment which will go forward as soon as possible will complete the despatch of the seed collection during the past year.

It is reported from Great Britain that the trees above mentioned grow exceptionally well in the British Isles.

Canada's greatest need to-day is creative and practical thinking by the individual. The agricultural and industrial world is composed of individuals. Because a number, not by any means a majority, think along progressive lines, trade and employment are made possible. Industrial and agricultural development depends on the increase of this number of right-thinking individuals. And this because all action is resultant upon thought.

Agricultural & Industrial Progress in Canada

Published Monthly. Free on request.

It will be appreciated by the Department if editors and writers using matter from this Bulletin will quote source.

Norman S. Rankin, *Editor of Publications.*

E. L. Chicanot, *Asst. Editor.*

General Agricultural Situation

*By J. Dougall, General Agricultural Agent,
C.P.R., Montreal*

The season for the Canadian Agriculturist to commence his activities for 1922 has about arrived. We have passed what has perhaps been one of the most disappointing years that Canadian agriculture has seen. This for many reasons. The farmers had been led to believe that the high prices prevailing during the period after the armistice would continue. They were badly advised. Prices deflated very much faster than even the pessimist had expected. The early part of the grain season was disappointing, and the price of live cattle went to pre-war levels. The two encouraging features were hogs and dairy products. These kept at a fairly high price, and in those provinces where dairying was the prevailing agricultural occupation, the financial condition of the farmer was the best.

However, the indications are that the Dominion of Canada will have an acreage under cultivation in 1922 in excess of that of 1921. The West, in spite of the depression, is going ahead with the preparations, and with reasonably good weather in the spring will get in a good average acreage.

British Columbia.—Difficulties in this province presented themselves in connection with the marketing of apples. The market was flat and quantities of apples were put in cold storage. This has now been cleaned up and there is an expected increase for 1922. The outlook for this season is good. It is intended to pay special attention to the pack.

Alberta.—Reports are that conditions are good. Moisture sufficient. Farmers are buying machinery.

Saskatchewan.—Farmers, in some districts, will require to have help but, generally speaking, are in good financial condition. Condition of the land on the whole is satisfactory.

Manitoba.—Expectations are that acreage will exceed 1921 and conditions coming out of winter are encouraging.

Ontario.—Farmers as a whole, in fair financial condition, but considerable acreage of fall seeding will have to be re-seeded.

Quebec.—This Province is coming through the defaulting period well. Seed will have to be brought into the province on account of drought last year. The railways have made special rate reductions for this purpose.

Maritime Provinces.—Conditions as a whole are fair except in the Annapolis Valley apple district where conditions are good and the outlook for the apple crop for 1922 is excellent. It is intended to pay special attention to the pack this year.

Livestock.—We are still facing the question of live stock markets and a conference is to be held in Saskatchewan at an early date, to find some solution of the problem. The result of the live cattle export for 1921 was very

unsatisfactory. The cattle exported to the British Isles did not bring the Canadian farmer a reasonable return. The cost of transportation has been materially reduced on both rail and ocean, but conditions for marketing in the United Kingdom will have to improve before it will be commercially sound to ship. The cattle have come through the winter in excellent condition and there should be a goodly number for export next autumn.

The cattle markets in Canada have been firmer on account of small numbers offering but the situation looks more encouraging.

The Fruitlands of Ontario

Reports from the various fruit growing sections of Ontario indicate a greater interest in horticulture, and prospects are for a much larger area being devoted to fruits this year than last. The grape growers of the Niagara peninsula are said to have planned a greater acreage than the combined area set out during the war, whilst nurserymen all over are in receipt of orders which tax their capacity. Thus the province of Ontario would seem to be instigated by a determination to maintain that distinction she has held for so long as the first fruit producing province of the Dominion. Whilst in the multitude of phases of provincial endeavor horticulture has become largely subservient as an industry, by reason of the excellency of conditions and the priority of establishment it is still the first producing area of the Dominion.

It has been said that Ontario possesses every quality to become one of the first fruit growing sections of the universe but that of the men to take advantage of the fine natural conditions. The fruit belt of Southern or Old Ontario extends from East to West for a distance of over 400 miles and from North to South for from 50 to 150 miles, constituting an area of from 20,000 to 60,000 square miles. The yield at present is limited only by the want of adequate labor and its possibilities are as yet unmeasured. In this territory various kinds of apple can be produced, the quince, cherry, strawberry, and other small fruits, whilst grape growing is particularly successful and profitable.

Greatest Fruit Producing Province

At the time of the 1911 census, Ontario had 279,011 acres of orchard; 12,973 acres of small fruits; 8,542 acres of vineyard, and 63,810 acres of vegetable. Though this area has been increased substantially since that time, it can be readily realized what an infinitesimal portion of the orchard lands of the province are producing the crops to which they are so well adapted. And yet at the time of the last census Ontario was producing 98 per cent of the Dominion's grapes, 92 per cent of its peaches, 69 per cent of its plums and 60 per cent of its apples and cherries. The average annual yield of apples in the province is about a million barrels and of grapes about 20,000 tons.

Ontario has a great outlet for its apples and pears in the markets of the British Isles, with whom a thriving and prosperous trade has been built up. Hundreds of cars of the tenderer fruits also go each year to the Prairie Provinces, in the greater part of which they cannot be raised, and the province is largely their source of supply of peaches, grapes and cherries. A profitable market has been developed in the United States, where large consignments of fruits find their way. In the past season, though subject to a duty of thirty cents per bushel, shipments of fruit across the border were heavy.

A further profitable market is the canning factory, and it is no unusual thing for the fruit grower to sell his entire crop in this direction before it is ready to handle. There are more than seventy canning factories located at suitable transportation centres engaged in putting up fruit and vegetables in tin and glass for sale throughout the Dominion and for export to the British Isles and other parts of the world.

Co-operation Through Many Organizations

The spirit of co-operation has long been working in the orchard sections of the province and societies have been formed with the object of the education of the fruit-grower and the handling and sale of his crop. There are more than fifty such societies carrying out their beneficial work. Recently one large co-operative selling organization was formed of several societies in the Niagara Peninsula to handle and market the entire production of fruit in that area with the exception of the grape crop which has its own organization.

There are wide and varied opportunities for fruit raising in Ontario, and the best apple lands, ready for planting, can be purchased for from \$40 to \$100 per acre. Excellent peach and cherry lands in the Niagara district range from \$150 to \$300 per acre. Grape lands in the same district run from \$50 to \$200 per acre. In newer fruit districts prices are lower. The capital already invested in the field of fruit is \$75,000,000 and the opportunity for further investment enticing. Though three-quarters of the fruit in Canada is produced in Ontario, the industry is still considered in its infancy.

Farm Land Values

The fall in the prices received for agricultural products in 1920 was reflected in a decline in the average values of farm lands over the Dominion, thus recording for the first time in Canadian agricultural history a period in which no elevation in the prices of farm lands over the preceding year was registered. Up to the year in question, the only governing factor in setting the value of Canadian farm lands was that of increasing settlement and the consequent decreasing availability of land remaining open for settlement. The extraordinary prices which prevailed for farm produce in 1920 introduced another factor. Farms became more valuable assets and farmers consequently held their properties at higher prices. The same exaggerated values in that period are seen in that year in the amounts paid farm help

which were \$86 for men and \$47 for women per month in comparison with \$67 for men and \$42 for women in 1921; and in the prices obtained for cattle, horses bringing \$106 in 1920 as compared with \$83 in 1921, milk cows \$80 as compared to \$51 and other cattle in like proportion. Thus the decline in farm values in 1921 was a natural step in the adjustment of abnormal after-war conditions, and was merely a getting back to the road of gradual elevation regulated by the dwindling availability of land.

The average value of the occupied farm lands of Canada, which includes both improved and unimproved lands, together with dwelling houses, barns, stables and other farm buildings, is returned for 1921 as \$40 as compared with \$48 for 1920, \$46 in 1919, \$41 in 1918, \$38 in 1917, \$36 in 1916, and \$35 in 1915. Thus it is seen that present day land values have largely assumed the place they would reasonably have filled had not the interruption of inflated prices occurred causing farmers, in the possible contemplation of relinquishing their holdings, to place a proportionally higher figure upon them.

Values Highest in B.C.

So many branches of farming are followed in Canada, the practice being so intensive in some areas and so extensive in others where land is more plentiful, that a great variation exists in the prices at which farm lands are held in the various provinces. Thus in British Columbia, where the intensive fruit farm of small acreage is the rule, prices are found to be the highest, and the Pacific Coast province leads the Dominion with an average price of \$122 per acre for its farm lands. Alberta, which province has probably more vacant land awaiting settlement than any other region, records the lowest average price with \$28 per acre. The varied farm lands of Ontario return an average price of \$63; those of Quebec \$59; Prince Edward Island \$46; Nova Scotia and Manitoba \$35; Saskatchewan \$29 and New Brunswick \$28.

The remarkable feature in connection with the annual publication of land values in Canada is the discovery that farm land of such high fertility and proven productive qualities can be obtained at such low rates, for it must be borne in mind that the prices quoted above have reference only to occupied farm lands at least a part of whose areas is under cultivation and is supplied with a house and other buildings. Take the Province of Alberta, for instance, where the average price of occupied farm land last year was \$28 per acre. The average yield of all wheat in Alberta over the last five years has been 14.75 bushels to the acre and that of oats 32.50 bushels. In the same period the average price received for the former has been \$1.66 per bushel and for the latter .53 per bushel. Thus in one year an acre of Alberta land seeded to wheat returned an average of \$24.50 or to oats \$17.

Unceasing Progress of Settlement

It has been proven over long years of experience, that Canadian farm land outyields in most cereal crops other farming countries, for instance the United States, and the prices of Canadian farm lands bear no relation to their productive powers. Their low figures have been set entirely by the amount of vacant land which remains available for settlement, and their annual values are in a gradual ascendant as this supply dwindles. Probably no country in its colonization history has recorded such a rapid, steady, and consistent rise in farm land values which is merely the mirroring of the unceasing progress of land settlement. Between 1915 and 1921, for instance, there is a rise of from \$35 to \$40 per acre, or practically a dollar per acre per year. For the acre of Alberta land which the settler might have secured for \$18 in 1908 or for \$21 in 1914, he must pay \$28 for to-day.

One may, perhaps, safely assume that the future will be free from world-stirring events such as the Great War and from the effects of their devastating aftermaths, and the prices of Canadian lands be governed entirely by the diminution in the supply of available farming tracts. Granted only the working of this factor, the same steady

rise in prices is inevitable, for Canadian land settlement is a never ceasing movement and the amount of unsettled land, though enormous, is not by any means inexhaustible. The relatively infinitesimal amount of land settled and rendered for the first time productive each year has its effect upon land prices and causes those with holdings to set them at a higher rate. The rate is rising faster than the average individual can increase his personal wealth, and procrastination on the part of a contemplating settler is inimical to his best interests.

Vegetable Growing on the Prairies

In 1872 the first exhibit of vegetables grown in Manitoba was shown in London, England, and the people there were so incredulous over the fact that such vegetables were raised in what they considered to be a land of ice and fur that they declared they were made of wax; and it was not until they were invited to cut them in halves that they were entirely satisfied they were actually vegetables, not imitations. Though cultivation on the Canadian prairie has made phenomenal progress since that time, and western soil, in combination with the climate obtaining in the West, has proved its adaptability to a myriad phases of agriculture, the extent to which Manitoba and its sister provinces of the prairie are producing vegetables is not widely appreciated.

F. W. Brodrick, professor of horticulture at Manitoba Agricultural College, recently made the statement that within five miles of Winnipeg he had himself produced seventy-two varieties of vegetables. Vegetables can, he claims, be grown in luscious profusion in Manitoba and the West, and in his belief, the East is not capable of producing such vegetables as are being grown in Manitoba.

Prior to 1917 the number of vegetable gardens in the surroundings of both city and country houses was pronouncedly small, and few farms raised these products in excess of their requirements. The encouragement given to establishing war gardens administered a stimulus which has to a degree been permanent, and to-day more is generally known about the possibilities of vegetable gardens in the Prairies than was previously appreciated. There is now a much greater acreage devoted to this phase of agriculture, and, as a matter of fact, the excessive extent to which vegetables are being produced in the absence of canning and preserving factories, constitutes a real problem of the Prairie Provinces.

Many Varieties Produced

The vegetables grown in the Prairie Provinces to-day include practically every variety in common household use, cauliflowers, carrots, celery, corn, citrons, cucumbers, lettuce, onions, parsley, parsnips, potatoes, radishes, rhubarb, spinach, squash, turnips and tomatoes. The increasing acreage devoted to corn on the prairies has been a significant feature of agriculture in recent years, and this has now become a staple fodder crop to be found on most farms. Last year tons of

tomatoes in Manitoba had to be shovelled out of the glass houses because of an excessive production. In the same year the three prairie provinces produced for commercial purposes 12,097,000 bushels of potatoes out of a Dominion production of 84,616,000; 1,484,000 bushels of turnips out of 27,379,000; and 3,600,000 bushels of fodder corn out of 40,199,000 in all Canada.

Irrigating certain areas in southern Alberta has revolutionized their productive powers, increasing the acre yield of potatoes alone, in an 11 year period, by 205 bushels. There are few varieties of fruit or vegetables which cannot be raised there, and already a fairly substantial commercial activity has resulted in local markets and increased train service. With greater facilities for caring for the harvests there are great possibilities in these regions.

The Western Canadian prairie to-day is raising vegetables in excess of its needs, and has proven beyond any doubt what can be accomplished in this regard. There is no doubt much more would be done if there were canning factories and preserving plants to care for the surplus of their products and vegetable growing be added to dairying, apiculture and other less important branches of agriculture to supplement the larger issues of wheat growing and stockraising. Though there are 120 canning factories in Canada there is not one located in the Prairie Provinces, and of 40 preserving establishments there is only one in each of the provinces of Manitoba and Alberta. A wide field for development exists here.

Announcement has recently been made that the erection of a vegetable canning factory at Winnipeg will probably be undertaken this year provided support is obtained for the project from growers located in adjacent municipalities. The cannery which it is proposed to erect will be able to handle the first year, the crop from 400 acres of peas, 100 acres of corn, and a large acreage of wax beans, cauliflowers and cabbages.

The Canadian Pacific Annual Report

The Canadian Pacific Railway Company earned 11.5 per cent. on its \$260,000,000 common capitalization for the year ended December 31st, 1921, according to figures made public by the company recently.

This compares with 11.4 per cent. in 1920; 10.8 per cent. in 1919; 10.97 per cent. in 1918; 15.89 per cent in 1917; and 16.76 per cent in 1916.

The increase in the percentage of earnings, which takes into consideration the inclusion of special income, is accounted for more by the earnings of railway and lake steamers this year than by special income account, although the latter income is shown at the highest figure since the year 1914-15. Last year earnings on the common stock aside from special income equalled 7.29 per cent.; in 1920, 7.17 per cent.; in 1919, 7.32 per cent.; in 1918, 7.85 per cent.; and in

1917, 11.78 per cent. In 1921 earnings from special income equalled 4.22 per cent., as against 4.21 per cent. in 1920, and 3.48 per cent. in 1919.

The outstanding feature of the figures submitted is the reflection of strict economies in keeping with the times which permitted the company to achieve the result shown in the face of a considerable decline in gross earnings from the record figures of 1920, the decline in working expenses being proportionally much greater than the reduction in gross earnings.

Gross earnings for the year were \$193,021,854, as compared with \$216,641,349 in 1920, and \$176,929,060 in 1919. Operating expenses are shown at \$158,820,114, as compared with \$183,488,305 in 1920, and \$143,996,024 in 1919. After the deduction of fixed charges and the usual \$500,000 for pension fund a balance of \$22,182,668 is left applicable to dividends, as compared with \$21,877,635 in 1920, and \$22,271,526 in 1919.

After dividends, a surplus of \$755,391, compared with \$450,359 in 1920, and \$844,250 the previous year, is obtained.

Special income, at \$10,987,199 showed a slight increase over that of the previous year, and after deduction of dividends of 3 per cent., and the balance added to previous surplus, the present surplus at credit of special income account amounts to \$21,767,490.

Following are the earnings of the enterprise for the past four years:—

	1921	1920	1919	1918
Gross earnings.....	\$193,021,854	\$216,641,349	\$176,929,060	\$157,537,698
Working expenses.....	158,820,114	183,488,305	143,996,024	123,035,310
Net earnings.....	\$ 34,201,740	\$ 33,153,044	\$ 32,933,036	\$ 34,502,388
Fixed charges.....	11,519,072	10,775,409	10,161,510	10,177,513
Surplus.....	\$ 22,682,668	\$ 22,377,635	\$ 22,771,526	\$ 24,324,875
Pension fund.....	500,000	500,000	500,000	500,000
Balance.....	\$ 22,182,668	\$ 21,877,635	\$ 22,271,526	\$ 23,824,875
*Transferred.....				193,977
	\$ 22,182,668	\$ 21,877,635	\$ 22,271,526	\$ 23,630,898
Preferred dividends.....	3,227,276	3,227,276	3,227,276	3,227,276
	\$ 18,955,392	\$ 18,650,359	\$ 19,044,250	\$ 20,403,621
Common dividend.....	18,200,000	18,200,000	18,200,000	18,200,000
Net surplus for year.....	\$ 755,391	\$ 450,359	\$ 844,250	\$ 2,203,621

SPECIAL INCOME ACCOUNT

Special income.....	\$ 10,987,199	\$ 10,966,448	\$ 9,040,342	\$ 8,128,751
Dividends.....	7,800,000	7,800,000	7,800,000	7,800,000
Balance.....	\$ 3,187,199	\$ 3,166,448	\$ 1,249,342	\$ 328,751
Previous balance.....	18,580,291	15,413,843	14,164,501	13,835,750
Spec. inc. act. surplus....	\$ 21,767,490	\$ 18,580,291	\$ 15,413,843	\$ 14,164,501

*Net earnings commercial telegraph, January and February transferred to special income account.

Referring to the foregoing, the *Montreal Gazette* in its editorial column, on the day of publication of the report, says:—

The recapitulation of earnings by the Canadian Pacific Railway Company for the year 1921 will undoubtedly come as a pleasant surprise to those who have not been carefully following the activities of the company, week by week and month by month, to see the splendid effort being made by this great road during a period of such difficulty to business enterprises in general and perhaps to carriers in particular.

The conditions which have obtained during the period under review make the results shown by the company a monument to the economic acumen of its management. Railway labor, which is one of the greatest items of expense in operations, has not been disposed to accept the wage reductions demanded by the times to the same extent as labor in almost any other enterprise. Despite this fact, the management of the C. P. R. has been able to bring down operating expenses to an extent that, in the face of a sharp decrease in gross from the record figures of 1920, a higher percentage of earning can be shown on the capital stock.

It is, perhaps, as it should be that Canada's greatest enterprise should set an example in this respect, and it would be well for a great many of the lesser organizations to study the methods of the C.P.R. for the good of themselves and that of the economic structure of the Dominion as a whole.

Canadian Shoe industry

Canadians are now consuming footwear ninety per cent of which is of their own manufacture, whereas twenty years ago fifty, sixty or even seventy per cent of the Canadian annual consumption was imported stock. Canada today can supply the Dominion's entire needs in footwear, and the Canadian manufactured product compares very favorably, grade for grade, with that of any other country. Such importation as persists is unwarranted, and with a production in 1921 of about fifteen million pairs of shoes, which due to the general slump in trade was considerably below normal, Canada was able to engage in an export trade of some volume.

The Canadian shoe industry is one of the most important as well as one of the oldest of the Dominion's manufacturing activities and at the present time occupies something like sixth place amongst the country's industries. The making of shoes in Canada was firmly established as far back as 1667 and has developed with the country's population until in 1920 there were 171 factories in Canada capitalized at \$32,500,000 with 13,000 workers who had 70,000 dependants and were receiving in wages and salaries \$13,500,000. The annual production in that year was \$65,500,000. In 1921 the industry witnessed an expansion in the establishment of new plants though the total production was lower due to general conditions.

A peculiar feature of the boot and shoe industry in Canada is that in its every phase it is essentially Canadian. This is true in regard to the control of factories, the use of Canadian raw material, and to a large extent, the use of Canadian made machinery. The only factories which were established in the past by United States manufacturers have since passed into Canadian hands. The industry is almost exclusively confined to the provinces of Quebec and Ontario, the former having pre-eminence with about ninety per cent of the Dominion's factories. Montreal and Quebec cities alone have ninety-eight plants. Quebec's share of the year's output accounts for about sixty-seven per cent of the Dominion's whole and Ontario for about thirty per cent.

Valuable Export Trade Developed

A valuable export trade in shoes has been developed in the Dominion largely due to the war-time demand. In 1914 the total export of Canadian boots and shoes amounted in value to \$82,000. It increased phenomenally during the years of hostilities and amounted to \$1,130,000 by 1919. Between 1919 and 1920 it further increased to \$5,680,000. In 1921 there was somewhat of a decline due to the general slump in trade and also to the fact that Canadian export trade had not become thoroughly established when the crisis set in. The time is now considered more propitious and Canadian shoe manufacturers are confident of regaining that volume of the export trade secured during the war.

The boot and shoe industry is one of which Canada is justly proud, one of its earliest in foundation and essentially Canadian throughout its history. It is now capable of supplying all domestic needs, and the relatively small importation which still persists but is decreasing, is unwarranted in view of this fact, and is the sole remaining vestige of a lack of confidence in the home product which formerly was more general. The export market is a valuable and voluminous one, comprising such countries as United Kingdom, United States, Belgium, France, Greece, Newfoundland, Russia, St. Pierre and Miquelon and other countries, and no fear is entertained of the Dominion product losing the popularity it won during the years of the war.

Why Canada ?

We have been asked on several occasions by leading business men in the United States what particular arguments could be advanced to a United States manufacturer covering the advantages which he might expect to derive from the establishment of a Canadian branch factory.

In many of these cases the inquirer, in a general way, realizes that a Canadian branch factory would be a good proposition for his own industry but has found difficulty in interesting, possibly, his Board of Directors, through the want of any concrete line of argument summarizing the advantages of such a policy.

This matter has been admirably dealt with in many voluminous reports, but we realized that what was required was a concise synopsis of just those points which would appeal to the practical business man.

We have accordingly prepared a leaflet which we reproduce below; we are giving it wide circulation to a large list of United States manufacturers to whom we think it will prove of interest and value. We realize that our list possibly does not include a number of firms who would also like to receive this information, and we shall be pleased to furnish copies of the leaflet to any such on written application to the Editor of this Bulletin.

To United States Manufacturers

If you are interested in the Canadian market or in export business to British Empire and foreign countries the following are some reasons why you should locate your industry in Canada.

Temporary Conditions

1. **United States Money at a premium in Canada.**—This means greater value for expenditure on capital account (purchase of land, erection of buildings, plant, machinery, etc.)
2. **Canadian Money at a discount in the United States.**—Strong tendency to keep money in Canada and resulting propaganda and sentiment in favour of "Made-in-Canada" goods. In some lines this is an advantage for selling goods in United States markets.
3. **Exchange Rates.**—Slightly depreciated value of the Canadian dollar. A given sum of foreign money purchases more Canadian than United States dollars. This constitutes a direct benefit to the foreign purchaser of Canadian goods.

Permanent Conditions

1. **Preferential Tariffs.** Canadian made goods get preferential advantages in British Empire countries as well as the benefit of trade agreements with certain foreign countries.
Great Britain grants a rebate of one-third duty on certain articles including motor cars, musical instruments, clocks, cinematograph films, and one-sixth duty off numerous other articles.

Mr. Lloyd George states that as articles are added to the tariff, preference will be extended to British Empire countries. The subject is listed for the next Imperial conference.

British Colonies in West Indies, British Honduras, British Guiana, and Central America give Canada a preference ranging from 10% to 50%.

New Zealand imposes a surtax on goods from Non-British countries averaging 12½% as well as a preference of about 10%.

South Africa extends a rebate of 3% on all dutiable imports.

Cyprus, one third off certain goods and one-sixth off a large list of articles.

Australia, Hong Kong and Shanghai are traditionally pre-disposed to trade with British Empire countries and have preferential measures under consideration.

Canadian made goods enter France under favorable conditions under a special trade agreement with that country.

The Canadian manufacturer gets a drawback on imported materials used in manufacture in Canada. This amounts to 99% on articles made for export and varies on articles for home consumption.

2. **Railroad Situation.**—The principal transcontinental railroad company operating in Canada can quote through rates promptly and efficiently and is in a position to give service unhampered by complicated connections with other lines. Shippers from all important Canadian points are able to do their business with the same transportation company for the entire routing of their products by rail or water either to Eastern or Western destinations in the British Empire or most foreign countries.

Thus the Canadian Pacific Railway, in connection with its transcontinental railway system, operates steamships to Liverpool, London, Glasgow, Southampton, Havre, Antwerp, Naples, Yokohama, Nagasaki, Kobe, Shanghai, Manila, Hong Kong, Honolulu, Suez, Fiji, Auckland and Sydney. Canadian ports have good shipping facilities to all European and Oriental markets.

3. **Development of a New Country.**—The railways seeking to develop industrial resources tributary to their lines maintain special industrial departments

whose duty it is to do everything possible to further the establishment of successful traffic-producing industries. These staffs have all information concerning raw materials, industrial sites, manufacturing conditions and are able to give advice on location of industries with a full knowledge of conditions and pertinent factors. Such gratuitous services constitute a real saving to the prospective manufacturer in time and money which he must otherwise spend in visiting numerous points to seek preliminary information.

Local bodies anxious to augment the populations of their town or city and increase their prosperity by establishment of new industries frequently offer special inducements in connection with industrial sites, taxation, etc.

4. Canadian Markets.—Can be better developed, enlarged and taken care of from a Canadian plant and organization than from London, New York or elsewhere abroad.

5. Empire Markets.—A Canadian organization is in an excellent geographical distributing centre and keeps in close touch with the British Empire trade situation.

6. Raw Materials.—Users of Canadian raw materials by making their product in Canada save tariff charges on the export of their raw materials, save freight charges on the transportation of these raw materials and save freight and tariff charges on the proportion of finished product which sells in Canada. Also by locating plant near source of raw material save overhead expenses.

Canada is rich in industrial raw materials such as minerals, fuels (coal, natural gas, peat) clays, feldspar, building stones, limestones, cement ingredients, timber, bitumen, oil shales, fluorspar, nickel, mica, graphite, abrasives, sands, asbestos, magnesite, and many others.

7. Labor conditions in certain parts of Canada are better, more stable, less addicted to organized agitation than in most other countries. Any industry which is prepared to deal fairly with labour can be assured of an abundant and cheap supply in any location where the establishment of that industry is commercially justified. United States labour rates to some extent influence Canadian, but local conditions also have a strong effect (as in the Province of Quebec).

8. Power.—The supply of cheap hydro-electric power is one of Canada's greatest assets. The amount developed is but a small proportion of that available and its distribution is especially fortunate in relation to large distributing centres such as Toronto, Montreal, Winnipeg and Vancouver. It is also fortunate that in those provinces where large hydro-electric development cannot be had, there are vast resources of coal available.

9. Fuel.—Although certain parts of Canada are dependent for coal supply on importation from the United States, there are both in the East and West vast reserves of commercial coal only partially developed but which are coming to be more and more utilized from year to year.

In Western Canada vast fields of natural gas are available,—supplying light and power at lowest cost. In an important case natural gas is sold to industries as low as one cent per 1,000 cu. ft.

The not improbable discovery of commercial oil fields may become an important additional source of fuel in the not distant future.

A New Tanning Process

A company, in which Sir James Outram and other prominent business men are interested, is under organization at Calgary to establish and operate a tannery using the French vacuum or Nance process. It is stated that it has the endorsement of the Provincial Government and the promoters expect shortly to have the necessary capital to begin operations. They claim also to have the rights for the process in Canada, and

have selected Calgary as the point of manufacture for that portion of Canada west of the Great Lakes.

The Nance process of tanning was invented by an Australian named Nance. The method was patented in England ten years ago. It does not appear to have made much headway in England in this time, but in France it is said to have been taken up and pushed, largely on account of the war, when it was necessary to obtain leather under a short period of tanning. It is also said that a few years ago to tan under this process required fifteen days, since which time it has been discovered that by taking all the oxygen out of the tanning matter it is possible to turn out the product in six days. The labor required under the process is only about 10% of that under the old method.

Hermetically Sealed Tanks

The process consists of hermetically sealed tanks in which a vacuum is created after which the tanning material is allowed to run in. Being under vacuum and without oxygen it boils or is agitated like rapidly boiling water, under which condition the hide absorbs it; all the pores being open, the tanning material at once spreads throughout the mass, performs its function rapidly with no more damage to the material than under the old, slow, process, and, it is claimed, with less damage to the texture.

The promoters feel that a very large percentage of the hides of Western Canada could be collected at Calgary, and as a hide when tanned does not represent more than 30% of it in the raw state, in weight, if the produce from them, in the shape of leather, were for shipment, the cost of transportation would be materially lower than the raw hide.

The power required to operate this tannery is set at not more than 6 h.p. Machinery required, chiefly tanks, is not expensive, and local quarters in which to house the industry can be secured at reasonable figures. It is stated further that the company will accept as stock in the concern, quantities of hides which farmers and stockmen now have on hand for sale.

The Growth of British Columbia

British Columbia is frequently quoted as being potentially the richest area of Canada, as possessed of the greatest wealth of natural resources of the provinces of Dominion Confederation. In the development of these great riches lies the assured greatness of the Pacific Coast province, for the world has need of these materials and will insist on their development according as its needs grow greater. Already great progress has been made in the utilization of the stores of minerals, fish, timber, and agricultural resources, but as yet the immense wealth can hardly be said to have been tapped. The following survey will illustrate the rapid manner in which development in British Columbia has been taking place, which may be taken as an indication of future expansion, granted an influx to the province of capital and labor. Unfortunately it is not possible to give figures illustrative of the progress since the termination of the war, in which period the province experienced a stimulus

imparted by a new realization of world importance and which has been marked by many new features of progress and commercial innovation.

Owing to the extreme mildness of the climate of the greater portion of British Columbia and the varied conditions of soil, a greater diversity of agricultural pursuits can be followed there than in most of the other Canadian provinces. Livestock raising, grain growing, fruit culture, poultry raising, apiculture, dairying and mixed farming are all followed successfully and increasing yearly in production as in the number of their followers. A consistent increase in all phases is illustrated in a review of the past years.

Steady Increase in Field Crops

Field crops which in 1912 occupied 230,860 acres and accounted for a production worth \$10,593,000, occupied 292,880 acres and produced crops worth \$11,625,700 three years later. By 1920 a total of approximately 350,000 acres were devoted to this branch of farming and approximately \$22,500,000 received from the crops they yielded. The production of creamery butter rose from 1,204,598 pounds in 1915 to 2,047,244 pounds in 1920 and cheese from 10,000 pounds to 340,553 pounds in the same period. The 1910 yield of honey in the province was 20,000 pounds worth \$3,200; in 1921 it amounted to 309,074 pounds valued at \$86,631. A total of 446,420 dozen eggs were marketed in the province in 1910 for \$156,247; in 1921 it was nearly double this. In 1910 the value of fruit and vegetable production in British Columbia was \$1,939,110; in 1921 fruit alone accounted for something like \$8,000,000.

A consistently high yield of production has been maintained in the province, exemplified in the government averages published for the ten year period 1908 to 1917. Wheat averaged 31 bushels per acre, oats 56 bushels, barley 37 bushels and potatoes 206 bushels. This in conjunction with continuous settlement has had the effect of annually increasing the value of provincial land. In 1908 the government estimated an average acre of British Columbia land to be worth \$76.10; by 1915 it had risen to \$125; in 1917 it was \$149; and in 1920 \$175 per acre when the average all over the Dominion was \$48.

In regard to its fisheries, British Columbia leads all the Canadian provinces, and its salmon product accounts for the largest single item in Dominion fisheries' revenue. This fishery on the Canadian Pacific coast is carried on on the largest individual fishing ground in the world. The herring and halibut also account for substantial items in the returns, whilst altogether a wide variety of species are taken on, on the British Columbia coast. A development of the past few years has been the establishment of whale fishing in those waters, the sale of whale oil now being an important provincial feature whilst that of canned whale meat is making progress. The Canadian Pacific coast fisheries have been long exploited, but nevertheless in the period from 1913 to 1920 an increase from \$14,455,488 to \$22,329,161 is noted in their value.

Minerals and Forests

A large part of British Columbia's area of 390,344 square miles is so highly mineralized that it is regarded as the richest mineral region of North America, though it is not yet the richest producing province of Canada. A wide range of minerals, the greater part hardly prospected, are found within its confines and are becoming exploited to a greater extent each year. The total production in 1917 of minerals was \$36,161,528 and in 1920 \$38,044,915. In the year 1918 under war stimulus a mineral production of \$41,083,093 was achieved. In the past twenty-five years the mineral wealth produced has aggregated about \$552,000,000 or approximately \$2,600 per head.

British Columbia's forests constitute the Dominion's great store of lumber at the present time with 30,500,000,000 feet of standing timber, and increasing demand is being made upon them as Eastern supplies become depleted. The value of lumber, shingles and lath produced in 1912 was \$19,446,646 and in 1919 \$43,103,641. In 1911 there was one mill producing paper pulp which used 150

cords worth \$1,140 and produced 90 tons of pulp. In 1919 there were 5 mills which used 250,388 cords worth \$2,789,697 and produced 194,126 tons of pulp. Development since that time, in the tremendous demand from the Orient, has surpassed any progress previously achieved. In 1918 there were 201 lumber plants in the province capitalized at \$42,408,448.

The manufacturing industry of British Columbia has made constant and consistent progress, keeping pace with a growing population and the increasing demand created by greater agricultural and other activities. The province's lines of manufacturing now cover a wide field and embrace in their scope practically all domestic needs and permitting engagement in an ever larger extent in the export trade. Growth can best be illustrated by the following comparative tables.

	1900	1910	1918
Establishments..	392	651	1,786
Capital.....	\$22,901,892	\$123,037,521	\$ 244,697,241
Employees.....	14,454	33,312	44,039
Salaries & Wages	\$5,456,538	\$17,240,670	\$50,422,163
Production....	\$19,447,778	\$65,204,236	\$3,458,036,975

In the year 1920 there were 25,000 men engaged in the lumber industries accounting for a production of \$92,600,000; 18,000 men in mining producing to the extent of \$32,580,626; 17,000 in fisheries producing \$20,000,000; 12,000 in agriculture producing \$59,000,000; 8,000 in ship-building producing \$28,180,000; and in general manufacturing, transportation, etc., 18,000, accounting for \$30,000,000.

In the past decade shipping has made fine progress in British Columbia, and each year sees new lines engaging in trade from provincial ports and the number of vessels in operation by existing companies augmented. The opening of the Panama canal reduced the water mileage from British Columbia to England by 42 per cent, and the entire feasibility of shipping western grain by this route has given a new and significant importance to British Columbia ports. Railways show the same increase in their mileage as this has been developed yearly to meet a growing traffic demand. The total provincial railway mileage in 1911 was 1,842; in 1915 it was 3,100; and in 1920 4,287.

Nature would seem to have forgotten nothing in planning the future of the fair and rich Pacific Coast province. Fertile agricultural land, minerals, fisheries, forests, the necessities of industrial establishment—all have been given in generous quantities. With 5,000,000 horse power available in her water powers but 304,535 has so far been utilized.

The province's growing popularity is evidenced in the increase in population, which in 1901 was 178,657; in 1911, 392,480; and in 1921 was 523,353.

Outlook in Western Canada

By John Sweeting, Industrial Agent, Western Lines, C.P.R., Winnipeg

The West will be busy with its seeding operations about the time these notes are printed. Already it would appear probable that some increase in acreage over last year will be brought under cultivation. The figures for Manitoba show a larger acreage ready than that of the previous season, while in a general way, the moisture situation to ensure a good seed bed appears to be satisfactory. The outlook is hopeful in this respect, and there is a feeling of confidence that an amelioration of past conditions is slowly materializing.

Reports show business is increasing, a better tone in trading is evident, country travellers are securing fair orders, and while collections are not

yet on a very attractive basis, a steady effort is being put forth to bring outstanding accounts into a more realizable shape. Undoubtedly business firms as well as the people, have subjected themselves to rigid economy during the winter months, and the result is now evident in the fact that there is money available both for construction and investment purposes. It would seem, therefore, that there is ample justification for the suggestion that the West will be able to carry on its ordinary annual business without any hindrance in this respect.

While any large program of construction depends to a certain extent on reductions labor is inclined to take in wages, negotiations so far would lead to the belief that such reductions will be small, say from ten cents an hour to one dollar per day. This will hardly meet the desires of builders and investors, but in the aggregate, with the reduction already in effect in the cost of building materials, the total saving in costs is of considerable value.

New Construction Under Way

Contemplated new construction work in Western Canada for January, 1922, amounted to \$8,625,100, while in February it amounted to \$6,004,200 with contracts amounting to \$2,939,500. This is a decrease over 1921 and 1920, but the March figure appears likely to show up more attractively as some idea has now been reached on question of costs, which hitherto has kept back figuring on new or contemplated work. There will, however, undoubtedly, be a large program carried out in the building of residences as every part of the West has already shown a desire to proceed with this very necessary work, and arrangements are being made for loans, both under the various housing schemes and through loan companies.

On the Pacific Coast, business continues to improve with a very satisfactory outlook. Mining and lumber situation is showing up better with much mining development work in view and possibilities for large lumber orders. The prairie requirements will soon be made evident, and with reduction in price of lumber and increase in value of grain and live stock, a considerable amount of work held in abeyance is likely to be proceeded with.

The Prairie Provinces are concentrating on seeding operations, with reports showing some demand for new machinery but purchases in the aggregate will not be large. With a good crop, however, machinery companies contemplate a very considerable volume of business in the Fall as there will be a large amount of replacement as well as new purchases. Conditions have been unsatisfactory in this relation but the situation has not warranted anything but economy.

Summing up, the situation generally is improving with prospects of betterment in the spring and summer months.

Optimism as to prospects appears throughout the West, and there is an undercurrent prevailing among the thoughtful that the tide has turned and a continuance of better business is likely to result.

Industrial Importance of Water Powers

(Prepared by the Dominion Water-Power Branch, Department of the Interior, as part of a new pamphlet "Canada as a Field for British Industries" issued by the Commercial Intelligence Service of the Department of Trade and Commerce.)

If any doubt previously existed as to the vital importance of water-power to the industrial development of a country, the conditions brought on by the war plainly demonstrated its unquestioned value as compared with other known sources. Its superiority rests on a number of factors, of which the chief are:—

1. Once the power development has been completed, the production of energy is comparatively independent of labour, transportation and allied problems.
2. Cheapness of operation.
3. The wide distribution of power sites and the ease with which hydro-electric energy may be transmitted, allows industries using this kind of power to locate where other conditions, such as raw material, transportation, etc., are favourable.

The above benefits, particularly the first, were soon recognized under war conditions throughout the world, when the intensive production of war material demanded every available unit of energy. This has further been accentuated by the apparently permanent substantial increase in the cost of coal which may be regarded as the most important competitor of water-power in energy production. As a result, various countries not only extended every effort to further development of water-powers, but also devoted much attention to estimates of available possibilities, so that there now exist fairly reliable figures for many parts of the world.

1. Water-Powers of the British Empire

The table following gives the best available information on the water-power resources of the British Empire. There are included only those British possessions known to have extensive water resources, while those not listed cover a wide area and include a large population.

COUNTRY	AREA IN SQ. MILES	POPULATION	HORSE-POWER	
			AVAILABLE	DEVELOPED UNDER CONSTR'N.
1. UNITED KINGDOM...	121,630	45,516,000	1,500,000	210,000
2. INDIA.....	1,669,000	302,885,000	VERY LARGE	181,400
3. BURMA.....	230,840	12,115,000	7,000,000	.....
4. CANADA.....	2,000,000	9,030,000	18,255,316 (MIN.) 32,075,998 (MAX.)	2,470,680* (INSTALLED)
5. NEWFOUNDLAND...	42,730	252,800	.....	60,000
6. AUSTRALIA.....	2,974,580	4,455,000	1,400,000	100,000
7. NEW ZEALAND.....	103,581	1,250,000	3,801,000	202,400
8. UNION OF SOUTH AFRICA.....	490,000	5,973,000	699,668	.....
9. BRITISH GULANA...	89,480	313,900	3,000,000	.....
10. BRITISH HONDURAS	8,598	42,300	.....	.....
11. NEW GUINEA, BRIT- ISH.....	90,540	201,400	10,000,000	.....
12. NEW GUINEA, FOR- MER GERMAN...	70,000	230,000	7,000,000	.....

1 The total for the British Empire was estimated by the Water-Power Committee of the Conjoint Board of Scientific Societies, England, July, 1918, at between 50 and 70 million h.p.

2 1,774,000 h.p. has been investigated.

3 Portion of area likely to be developed in the next fifty years.

4 New developments completed or under construction in 1920 represent approximately 650,000 h.p.

2. Water-Powers of Canada

In Canada it has been long recognized that special attention should be devoted to water-power resources. The efforts in this direction have had most satisfactory results in giving the Dominion an outstanding position in the British Empire with regard to water-power. This position is fully emphasized by Canada's most efficient hydro-electric supply. *Practically all industrial centres of the Dominion are supplied with electric energy derived from water-power with ample reserves located within easy transmission distance.* In certain parts, where water-power is not available, nature has generously supplied fuel reserves of coal, gas or oil. In addition to its enormous possibilities and the large amount already utilized, the advanced methods followed in investigating its water-powers and in classifying the available data have caused Canada to be recognized as the Empire's pioneer in this respect.

While many countries have estimated their water-power possibilities, in most cases the figures submitted are admittedly only very approximate and are not qualified as to exact conditions represented; that is, whether they are based on minimum flow of rivers, the use of storage reservoirs, the continuous or intermittent use of power and such similar considerations. The early beginning and intensive work carried on by the Dominion Water Power Branch of the Department of the Interior has recently made it possible to present to the public far more definite figures relating to Canada. In the table below the available power is given under two heads properly qualified as to conditions. The "ordinary minimum flow" is based on the averages of the minimum flow for the lowest two consecutive seven-day periods in each year, over the period for which records are available. The "estimated flow for maximum development" is based upon the continuous power indicated by the flow of the streams for six months in the year. This estimated maximum development is based upon the assumption that it is good commercial practice to develop wheel installation up to an amount the continuance of which can be assured during six months of the year, on the assumption that the deficiency in power during the remainder of the year can be profitably provided for from storage or by the installation of fuel power plants as auxiliaries. It represents a fair estimate of the maximum hydraulic power available, as distinct from the ordinary minimum power available. Thus the second table shows that for power sites upon which fairly definite data are available throughout the Dominion, the total possibilities aggregate 18,255,000 horse-power under conditions of "ordinary minimum flow," while based on dependable flow for at least six months of the year the total is 32,076,000 horse-power.

Available and Developed Water-Power in Canada

PROVINCE	AVAILABLE 24-HORSE-POWER AT 80% EFFICIENCY		TURBINE INSTALLATION H.-P.
	AT ORDINARY MINIMUM FLOW H.-P.	AT ESTIMATED MAXIMUM DEVELOPMENT (DEPENDABLE FOR 6 MONTHS) H.-P.	
1	2	3	4
BRITISH COLUMBIA.....	1,931,142	5,103,460	304,535
ALBERTA.....	475,281	1,137,505	32,492
SASKATCHEWAN.....	513,481	1,087,756	.....
MANITOBA.....	3,270,491	5,789,444	83,447
ONTARIO.....	4,950,300	6,808,190	1,052,048
QUEBEC.....	6,915,244	11,640,052	925,972
NEW BRUNSWICK.....	50,406	120,807	21,180
NOVA SCOTIA.....	20,751	128,264	35,774
PRINCE EDWARD ISLAND.....	3,000	5,270	1,933
YUKON AND NORTHWEST TERRITORIES.....	125,220	275,250	13,199
	18,255,316	32,076,098	2,470,580

The figures listed in columns 2 and 3 of the second table represent 24-hour power and are based upon rapids, falls and power sites of which the actual existent drop, or the head possible of concentration, is definitely known or at least well established. Innumerable rapids and falls of greater or lesser power capacity are scattered along rivers and streams from coast to coast which are not as yet recorded and which will only become available for tabulation as more detailed survey work is undertaken and completed. This is particularly true in the more unexplored northern districts. Nor is any consideration given to the power concentrations which are feasible on rivers and streams of gradual gradient, where economic heads may be created by the construction of power dams, excepting only at such points as definite studies have been carried out and the results made matters of record.

The figures in column 4 represent the actual water-wheels installed throughout the Dominion. These figures should not be placed in direct comparison with the available power figures in columns 2 and 3 for the purpose of deducting therefrom the percentage of the available water-power resources developed to date. The actual water-wheel installation throughout the Dominion averages 30 per cent greater than the corresponding maximum available power figures calculated as in column 3. The figures in the table, therefore, indicate that the *at present recorded water power resources* of the Dominion will permit of a turbine installation of 41,700,000 horse-power. In other words, the present turbine installation represents only 5.9 per cent of the present recorded water-power resources.

The figures quoted may be said to represent the *minimum water-power possibilities* of the Dominion.

As illustrative of this, the detailed analyses which have been made of the water-power resources of the provinces of New Brunswick and Nova Scotia have disclosed most advantageous reservoir facilities for regulating stream flow, and it is estimated that the two provinces possess within their respective borders 200,000 and 300,000 commercial horse-power. These figures provide for a diversity factor between installed power and consumer's demands.

Canada a World Fur Mart

Canada now has her national fur market with sales held three times per year, spring, fall and mid-winter. The next sale will take place in Montreal in May. At the fifth periodic auction of the Canadian Fur Auctions Sale Company held at the end of February, furs to the extent of approximately one and three quarter million dollars were sold. To an ever increasing extent the Montreal sales are assuming a distinctive national character, and a permanent Canadian market for Canadian peltry has rapidly sunk its roots in the industry. The volume of business transacted is swelling with successive sales, and the stability of the Canadian sales were evidenced by the manner it weathered the storm of the fur trade depression when similar organizations elsewhere did not survive.

The logic of a Canadian fur market is self evident, and such an establishment has been a pressing need for years. Canada not only produces the greatest volume but the glossiest and richest pelts of the world's production, and by reason of these qualities a Canadian sale can draw raw supplies from other countries, which in turn brings in its train buyers from a wider area. Raw furs for disposal at the recent auction came from all over Canada, the United States, Russia, Siberia, and other countries, whilst buyers were present from every part of the

Dominion, New York, Chicago, Boston, Philadelphia, St. Louis and every other United States centre. Europe was represented in buyers from London, Paris, Berlin, Vienna; Asia, in dealers from Vladivostok, Peking, and Yokohama; and Australasia, in purchasers from Sydney.

Montreal Originally a Fur Centre

A Canadian fur sale fills a need which has been insistent since earliest history. Montreal was originally a leading fur trading centre, but when the Hudson's Bay Company inaugurated the shipping of furs to England and established the later renowned London sales, the Canadian city began to decline in importance. For many years Canada then occupied, and was contented to occupy, a minor role as London developed into the fur market of the world largely on account of the volume and beauty of the Canadian contributions. The Great War practically put an end to shipments of furs across the Atlantic, and Canada herself being too engrossed in the affairs of War, New York and St. Louis seized the opportunity to establish fur markets and attained an abnormal degree of importance in this regard during the war years.

Emerging from the period of hostilities, Canada was conscious of a new status born of her achievements among the other nations of the world, which prompted her to greater independence of action. The fur trade offered an unique opportunity for asserting this spirit. For years Canada had been supplying the world with its richest and most voluminous pelts, had seen them go to foreign countries for auction where Canadian manufacturers bought back a portion of these same skins for manufacture. The force of argument was clear in the success of the first sale which brought Montreal, in a single bound, back to its old eminence as a fur centre.

Market Now Firmly Established

The Montreal fur auction ranks with the premier pelt market of the world. The United States markets in the past year suffered severely, but this was entirely due to the great slump in the fur trade and not to any extent to the rivalry of the Canadian sales. The American auctions it is confidently expected—even hoped for the sake of competition—will continue to operate, but their activities normally rank as local marketing centres, drawing the raw product from the areas to which they act as collecting points.

Winnipeg, similarly, where local sales have been organized, will act more in the capacity of a barter centre for local wholesale houses and not appreciably interrupt the flow of furs from the North-West to the Montreal depot. London's position as a fur centre will probably never be seriously assailed for reasons of sentiment as well as business.

Montreal, from the inception of Canadian history, has been the Canadian fur centre and logic-

ally so, merely denied this eminence from force of circumstances and the dependent situation in which the country existed. It had no difficulty in re-establishing itself—furs, and buyers of furs from the very first have been attracted from the corners of the earth. A Canadian fur market may be considered firmly established, and with part of the Dominion's hinterland a permanent source of fur supply, and the increasing development of the domestic ranching industry, might well, at not distant date, possess the distinction of the world's first fur market.

Across Canada—Sherbrooke

The city of Sherbrooke is the commercial and social capital of the Eastern Townships of Quebec, a fact which may not appeal as particularly impressive to those who do not know this area until it is appreciated that this section of the French Canadian province has the distinction of leading the world in two products, asbestos, of which it produces eighty-five per cent of the entire world supply, and maple sugar, of which its output exceeds eight million pounds annually. In every respect its location is a most enviable one from an economic point of view, situated in a rich mineralized and agricultural area, at an equal distance from Quebec, the provincial capital, and Montreal, the Dominion's metropolis, and in the heart of countless towns and small villages.

In addition to its position of commercial strategy, the location of the city is charmingly picturesque in its setting of typical Quebec scenery, with both the Magog and St. Francis rivers carrying their waters through it. The civic area has been well planned with thoroughfares laid out with a view to economic traffic and future expansion and containing public buildings and residences which, its citizens claim, are the equal in beauty and utility of any city of its size on the continent. The area of intersecting streets is frequently broken by public squares, parks and recreation grounds. Educationally Sherbrooke is an especially favored centre and has created a name for itself in this regard; Bishops College and School lie within three miles, at Lennoxville, with which it is connected by electric railway.

A Bi-Lingual Centre

The population of that part of the province of Quebec of which Sherbrooke is the hub is about equally divided between the urban and the rural and similarly between the English-speaking and French-speaking. The agricultural section is devoted principally to mixed farming and dairying in which it is exceedingly prosperous, as is indicated in the fact that the largest agricultural fair in Canada, with the one exception of that at Toronto, is held at Sherbrooke annually. Perhaps no better indication of the popularity Sherbrooke has won for itself in the past could be found than its

rapidly increasing population. This in 1900 was 11,127; in 1905, 13,369; by 1910 it had increased to 16,018; by 1915 to 19,314; and in the year 1920, Sherbrooke had a population of 23,493.

The total population of the zone served by Sherbrooke is about 250,000, and this, lying in such a richly productive area, it is natural that the city should be a very prosperous distributing area. Already there are two hundred retail and twenty-five wholesale stores serving the area surrounding the city and these are continually being added to.

Primarily however, Sherbrooke terms itself an industrial city, and in this phase looks to a future of great development and expansion. In this direction a gratifying progress is exhibited and profitable opportunities await the introduction of capital. The city is to be found amongst the first thirty industrial centres of the Dominion with 129 establishments capitalized at \$13,760,176, employing 6,327 men, and having an annual production of about twenty million dollars. Sherbrooke boasts of having the largest woollen mill, the largest compressed air machinery shops, the largest welding works, and largest automobile fabric factory, and the largest mesh bag factory in Canada. Other important industries are clothing, cotton mills, gloves, hosiery, underwear, boots, paper, machinery, cotton fibre, jewellery, rubber goods, pork packing, bottling works, brewery and vinegar factory.

Local Industries Expanding

Industry in Sherbrooke is expanding rapidly. The depression of 1921 affected local industry practically not at all, and it witnessed in that year the addition of several new enterprises. One of these was a new plant addition to the cotton mills, representing an investment of \$5,000,000; another a new plant to manufacture gloves, hosiery and underwear, capitalized at \$3,000,000 and employing 1,000 men; plant to manufacture superheaters for locomotives, etc., \$250,000; extension of plant of pulp and paper machinery manufactory, \$100,000; aerated waters establishment, \$75,000; jewellery manufactory, \$50,000; establishment to manufacture piston rings, \$25,000. Sherbrooke is shortly to become an automobile centre with the location there of a firm to manufacture batteries, as at the present time it is turning out many other accessories.

Sherbrooke offers peculiarly advantageous openings to incoming manufacturers. It is penetrated by four railroads and has thirty-six passenger trains daily. Seven railway lines, with a total mileage of 740 miles, serve its territory. The city owns five powers, having twelve thousand horse power developed and ten thousand undeveloped. This power is sold at \$21 per H.P. per year to manufacturers whom the city exempt from taxation.

Colonization and Development

Canada's need for a progressive policy of immigration and development was forcibly put before the members of the Montreal Kiwanis Club by Col. J. S. Dennis, Chief Commissioner, Department of Colonization and Development of the Canadian Pacific Railway, at a recent weekly luncheon of that organization in the Windsor Hotel. At the invitation of the Kiwanis, the meeting, which was a large one, was attended by members of the Rotary Club, Board of Trade, Chambre de Commerce, Trades and Labor Council, National Catholic Union, St. George's, St. David's, St. Patrick's Societies and other organizations.

Col. Dennis, in part, said:—

I feel that it is a privilege to be invited to-day to speak on the important subject of Colonization and Development, and I also appreciate very highly the opportunity given me to present my views on the subject to the Kiwanis, because I feel that your organization is one which acts vigorously in helping to solve municipal, provincial or national problems presented to you.

I also am sensible of the opportunity given to me to-day to speak to Canadians on a Canadian problem, and venture to point out that, as a result of the War, our Canadian Citizenship, and the name "Canadian," carry with them a responsibility that did not exist prior to the War, due to the fact that the name "Canadian" at that time did not have the distinctive standing throughout the world that it now possesses.

It is, I think, only fair that I should first establish my right to speak on the important problem of Colonization and Development before expecting that my views or recommendations will carry any special weight.

I have spent the past 50 years of my life in dealing more or less directly with this problem. My experience began with my arrival in Winnipeg 50 years ago next month, and finding there a village of about 1,000 inhabitants, with nothing west of it in the way of colonization and development until one reached the Pacific Ocean; since that date, in the service of the Dominion Government in exploring that vast Western country; then in the Land Department of the Hudson's Bay Company, then as Deputy Minister of Public Works of the old Territorial Government; and for the past 21 years in the service of the Canadian Pacific. My activities have been all more or less intimately connected with colonization and development, and I frankly confess that the subject is now becoming more or less of a hobby.

Replies to Sir Clifford Sifton

In spite of my long experience in connection with this important matter, my suggestions in connection therewith have lately been characterized as madness by Sir Clifford Sifton. I have the greatest respect for his opinion. We have known each other for forty years. I worked under him when he was Minister of the Interior and realize that the immigration policy that he put into effect was the only progressive and aggressive policy that we have ever had, and one that produced results up to the time that it died through excessive "red tape" and inaction. Further, I would point out, that while we had an immigration policy, we succeeded in 1913 in moving as many as 402,000 emigrants to Canada in one year, and it is certainly not madness to assume that, with increased desire and the necessity of emigrating, on the part of the people of the United States, Great Britain and certain desirable portions of Europe, that number can be largely increased annually, if we had a definite and well-administered colonization policy.

In any case, I much prefer to be called mad for aiming at ten million colonists in ten years and only hitting five million, than to continue shooting at nothing, as we are at present doing, and, as the Irishman said, "hitting it in the same place we missed it before."

I have no hesitation in saying that, to-day, the question of the establishment of a well considered and aggressive colonization and development policy is the most important matter with which we, as Canadians, are faced. It is the foundation upon which the superstructure of the solution of our railway, industrial and unemployment problems must be erected, and my effort in this brief address is to try to convince you that my views are sound.

The question, like our Dominion itself, is vast in size and many-sided in character and it will only be solved by wide vision and broad views on the part of our Governments and citizens, and will, of necessity, involve extensive expenditures.

Important and Pressing Problems

To prove that Colonization and Development is our most important and pressing problem, I want you to consider the following facts:—

Canada occupies a larger portion of this North American Continent than is contained in the United States, including Alaska, and while the United States has a population of over 100,000,000, yet our population is only 8,700,000. Here we begin to consider this problem, faced with the immutable law of the greater attracting the lesser.

In Canada to-day we have 1 mile of railway for every 236.5 of our population, and, in the four Western provinces, 1 mile for every 110. Compared with this, the United States has 1 mile of railway for every 404 persons, and Great Britain one mile for every 1804.

In the three provinces of Manitoba, Saskatchewan and Alberta, we have 30 million acres of land suitable for immediate cultivation, unoccupied and non-productive, within 15 miles of each side of the railways now in operation.

In the older provinces of Canada we have many thousands of improved farms, unoccupied and non-productive and waiting for colonists.

Our National Debt of Canada to-day is \$2,372,000,000, or about \$275 per capita of the population, and the annual interest on this debt amounts to \$114,000,000 as compared with a total Federal Revenue in 1913 of \$168,000,000.

If the facts I have quoted are facts, and I do not think they can be disputed, am I not justified in asking you the question—"WHAT ARE WE GOING TO DO ABOUT IT?"

My answer is—"COLONIZE AND DEVELOP."

Outlines Term Colonization

When I say "colonist," I use the term in the broad sense of the immigration to Canada of the colonist who will occupy and make productive, available agricultural areas, and also laborers, skilled and unskilled, who will develop our mineral and timbered areas and extend our industrial life, and finally, colonization of the necessary capital to make both of the preceding activities possible; but before I proceed to discuss the policy under which, I consider, this desirable end should be reached, I want to point out to you that colonization and development is no new matter in Canada.

During the period 1905-1914 we had an immigration into Canada of 2,500,000 people, divided roughly, one million from Great Britain, one-half million from the United States and one million from European and other countries. During that period we had a great constructive development program under way including the construction of additional transcontinental railways, the completion of branch line railways, particularly in Western Canada, and, in that operation, the growth of side tracks into villages, villages into towns, and towns into cities, almost overnight, together with vast expenditures by the Dominion and Provincial governments upon public works, by the municipalities in similar amounts, and in a vast expansion of our industrial activities.

That expansion through the medium of colonization and development was, of course, checked by the War, and during the War, and practically up to date, both our colonization and development have been standing still. We are now faced with the question of how we can again stimulate a large movement of desirable colonists to Canada and where they can be obtained.

Sums up Sources of Supply

Naturally, as part of the British Empire, we should first look to obtaining the greatest possible number from Great Britain or, rather, from the United Kingdom of Great Britain and Ireland. But, in doing this, we are confronted with certain limiting conditions which make it clear that no large proportion of agricultural colonists which we need can be obtained from there.

The present population of the United Kingdom as shown by the last census is, in round figures, 47,000,000, but it may surprise you to know that of this number, something less than 4,000,000 are engaged in agriculture, and you will, therefore, readily see that unless we are prepared to take a large number of colonists without any previous knowledge of agriculture, we cannot look for the immigration of large numbers from Great Britain. Further, it would now seem to be perfectly clear that the United Kingdom, and particularly England, must look forward to the emigration of many millions of its people, and our policy should be aimed at co-operative action between our Government and that of the Home country to evolve some scheme under which many of these people of the younger generation can be fitted for agricultural life in Canada by some preliminary training at home, and finishing the training here, together with final assistance to enable them to establish themselves as farmers after this training had been obtained.

In this connection there are immense possibilities, and one need only point to the remarkable results obtained through the medium of organizations like the Dr. Barnardo's Homes to realize what can be done in making good citizens of the younger generation from Great Britain if properly assisted and guided; and, in this connection, it might be of interest to you to note that 6,211 Barnardo boys who had been sent out to Canada by that organization served in our Canadian Expeditionary Force, of which some 531 were killed on active service, and that amongst those that served, many decorations, including the Victoria Cross, were earned. We also know that, to-day, we have many leading citizens in all of our professions and in our business and political life who came to Canada through this organization.

The United States Greatest Field

We must, naturally, look for the larger proportion of our agricultural colonists from the United States, where there is a large agricultural population, and draw from where the conditions of climate, agricultural methods, currency, weights and measures and other conditions are so analogous to those existing in Canada, and where, under existing conditions to-day, prices for farm lands being high, and the value of the farm products being low, there is a marked disposition on the part of the people, particularly in the Middle West, to emigrate.

We should also look forward to the immigration of large numbers of desirable colonists from Central Europe. I know that I will be, probably, charged with advocating the immigration of so-called foreigners. After all, what colossal egotism it is, on our part, to speak of foreigners. We should realize that we are, in fact, all foreigners on this Continent, and that while it should be our aim to maintain and extend British ideals and our Canadian citizenship, we must not forget that many of those who have come to us from so-called foreign countries are to-day amongst our most progressive and valued citizens and who have been and are taking an active part to solve our national problems and are proving by their willingness and desire to become good Canadians, as is proved by the fact that in one of our Western Universities over 50% of the students

are of so-called foreign parentage, and that, during the War, many of our military units, which gave the name of "Canadian" a new standing throughout the world, contained upon their rolls the names of many so-called foreigners.

I have indicated where we should go to look for colonists that we need, but it is perfectly clear that there is no use in going to look for them unless something more can be done than is at present being done to encourage them to come. We have no definite emigration or colonization policy at present, and, in fact, the enforcement of the existing Immigration Act, and the regulations thereunder, during the past two years has done more to discourage immigration and colonization than to encourage it, and, so far as Great Britain is concerned, has, without doubt, through the medium of our excessive regulations and unwarranted deportations, created the general feeling which now exists in Great Britain that we in Canada have closed the door and do not want British colonists.

Deportations Have Been Heavy

We have under our existing law and regulations, a provision for the deportation of colonists who do not come to Canada on a so-called "non-continuous journey." The enforcement of this regulation has resulted in the deportation of many desirable colonists, and, if followed to its logical conclusion, the regulation to-day can be utilized to refuse admission to Canada to any desirable colonist, due to the absurd fact that he did not happen to start on his journey from the country of his nationality—and the application of this regulation will be realized by you when I say that of the deported immigrants handled by the Canadian Pacific ships during the last year, 20% were deported on the ground of non-continuous journey, irrespective entirely, apparently, of whether they were the character of colonists we wanted or whether they would have made good citizens.

It may be taken for granted that, unless our Dominion Government is disposed to give this great problem of colonization the attention which its importance warrants, and make the necessary amendments to the Immigration Law and frame and enforce a system of regulations which will do away with many of the present unwise and unnecessary restrictions, we cannot hope for any large movement of the colonists that we so urgently need to help in developing our resources.

In considering the question of development, I would direct your attention to the fact that Nature has blessed us in Canada with resources of agricultural land, timber, minerals and other things which, potentially, are ample security for our vast National debt, but the possibility of taking care of and discharging that debt is entirely dependent upon our development policy. These resources, undeveloped, are of no value, and, without men and women, cannot be developed.

Recolonization of Vacant Lands Factor

I find that, at the present time, a general idea that we should close our doors except to those colonists who come here with the avowed intention of undertaking farming and I admit frankly that, particularly in Western Canada and in certain of our older provinces, recolonization of our unoccupied farms and agricultural development are the main factors in the problem we are discussing. But let me point out the following facts to you.

Taking the railway traffic of Canada as an indication of wealth resulting from Development, I direct your attention to the fact that, in 1920, the products of mines provided 35% of the railway tonnage, the products of the forests 18%, while agricultural products provided only 17%. It is true that these figures indicate the necessity for increasing our agricultural production to ensure that a larger percentage of our railway tonnage will come from that source, but at the same time they serve to point out the existing importance of the extension and further development of the products of our mines and forests, and the important part that that development will play

in aiding the solution of our railway problem and in adding materially to the general welfare of Canada.

In conclusion I desire to affirm that the problems I am outlining are non-political, and that a policy for their solution must be developed on broad lines and with the assistance of all interests, and must include, more or less, an open door, and the establishment of a well-considered, thoroughly staffed and well-administered world-wide organization to make our principles known and to ensure that we shall, through the medium of colonization and development, begin now, and carry on for many years, an aggressive and progressive policy for colonization and development, through the medium of men and money, of the natural resources with which Nature has so bountifully blessed Canada, and I appeal to you all, not only as members of the Kiwanis Club and other organizations represented at this luncheon, but also to you as citizens, who should realize the obligation of your Canadian citizenship in helping to solve these problems, to study them, to take an interest in them, and to do your share in helping to bring about their final solution.

Canada's Inland Lakes

A characteristic of Canadian geography is the remarkable number of inland waters and their great diversity of location. Extensive bodies of fresh water are to be found in every province from coast to coast. In settings of scenic grandeur, and for the main part teeming with edible fish, they constitute a valuable asset to the Dominion from the standpoint of beauty, sport and commerce. Taking only the principal inland waters of Canada, and omitting the smaller bodies which in themselves constitute a fine aggregate, there is a total water acreage of more than one hundred and twenty thousand square miles. Expansive lakes are to be found in all parts. They aggregate 360 square miles in Nova Scotia; 74 square miles in New Brunswick; 11,110 square miles in Quebec; 41,188 square miles in Ontario; 19,894 square miles in Manitoba; 8,329 square miles in Saskatchewan; 2,360 square miles in Alberta; 2,439 square miles in British Columbia; 34,521 square miles in the North West Territories; and in the Yukon 649 square miles. Lake Superior, with its area of 31,800 square miles, is the largest body of freshwater in the world. Lake Mistassini in Quebec comprises an area of 975 square miles; Nipigon in Ontario 1,730 square miles; in Manitoba; Lake Winnipeg, 9,457 square miles, Winnipegosis 2,086 square miles, and Manitoba 1,817 square miles; Reindeer Lake in Saskatchewan 2,437 square miles, Athabasca in Alberta 2,482 square miles. Great Bear Lake in the North West Territories contains 11,821 square miles and Great Slave Lake 10,719 square miles.

Many Varieties of Fish

A great variety of fish inhabits these waters, among them being alewives, bass, carp, catfish, eels, maskilonge, herring, perch, pickerel, pike, salmon, trout, shad, smelts, sturgeon, tullibee and whitefish. The toll of these is coming to account for a greater revenue each year, and Canada's freshwater fisheries in 1920 accounted for a

total of \$5,639,280. It is only in the past few years that commercial fishing has been entered upon in the lakes of the Western provinces, but this is fast growing into a substantial industry, and the whitefish from Manitoba, Saskatchewan and Alberta is finding increasing favor in all parts of the continent and has a ready sale in many of the larger centres of the United States.

Canada's inland waters have additional economic value in their possession of waterpowers and their utilization as a means of transport. The Great Lakes, for instance, provide a shorter route and a more economic haul to Montreal and the Atlantic ports for the vast volume of grain which annually comes from the Prairie Provinces. Lake steamers serve the Okanagan and Kootenay valleys in British Columbia as no other means of transport could adequately do and bear the rich natural products from these areas.

The wild beauty and primitive grandeur of Canada's lakes not only provide excellent holiday grounds to every section of the country's population but exert a powerful attractive influence to tourists and sportsmen. These waters have a varied charm and a difference in appeal in the provinces from coast to coast. Though many in the North-West remain in their primitive state, their wild splendor untarnished, others are accessible by railroad and motor road and increasing each year in fame as holiday grounds.

The Basis of All Riches

A Parody

Once upon a time there was a rich farmer who lived in a country called Dakota, and he had three sons. When the youngest came of age he called them to him and said to the eldest: "Son, here are \$5,000, take them and go out into the world and put it to account;" and to the next one, "Son, here are \$3,000; take them and go out into the world and put it at interest;" and to the youngest, "Son, here are \$2,500, take them and go thou also out into the world and seek thy fortune." Bidding the Old Man good-bye, they obeyed, turned and went forth.

In the fulness of time they returned to their father's house. The eldest said, "Father, here are the \$5,000 thou gavest me; with it I went down to a great city called Minneapolis, and there, in trade and barter, after much work and worry, I gained me other \$5,000." "Good," said the father, "thou hast done well."

The second son said, "Father, with the \$3,000 thou didst give me, I journeyed many days until I reached a great metropolis called New York, and there, in the narrow way known as Wall Street, after many headaches, heart-burnings and studying of markets, didst venture my talents and didst win other \$3,000." "Thou hast displayed ability," answered the old man, "but I like not thy choice of business."

The younger son then said, "Father, with the \$2,500 thou gavest me, I travelled north and westward to a rich and favored country known as Western Canada, and there in farm land invested my talents, neither giving it to others in trade and barter nor risking it upon a speculative market. Since the hour that I invested the talents thou gavest me, I have not touched or handled them."

Then the Old Man was exceeding wroth, saying, "How now, my son, thou hast neither principal nor interest to show for thy years of labor;" but the young man interrupted him with, "Stay thy hand yet a little, Father, and come with me. I have here two half rate land-seekers tickets over the Soo-C. P. R. to Western Canada, and if thou wilt come with me, I will show thee what I have."

They Journey to Western Canada

So they set out. After a pleasant journey they reached "The Prairie Provinces" and alighted from the train. The young man then led his father to a waiting motor that panted nearby and in a brief time whirled the Old Man over the undulating prairie to his fertile farm land. The prairie lay sun-kissed, smiling in the clear August afternoon, rippling with yellow grain which waved across the holding. A small herd of sleek cattle munched verdant feed contentedly in the pasture while fat porkers wallowed luxuriously in a muddy ditch, wheezing loudly in pure hog-joy. An army of hens and chickens bustled busily here and there and a comely woman welcomed them graciously from the open door of a neat, farm house, a tiny baby girl clinging to her skirts. The very atmosphere breathed peace, prosperity and happiness.

The young man spoke. "Father, I invested the talents that thou gavest me in this farm, and to-day its value is eightfold what it was when I became possessed of it. I am blessed in my home, my possessions and my independence, my cattle and my crops. Five pleasant years of work and happiness have I passed here. Say, have I not done well?"

Then straightway the Old Man fell on his neck and blessed him. "Son, thou hast learned, while yet a youth, that which neither of thy brothers learned, that the basis of all worldly wealth is land when that land is purchased in rapidly growing districts. Well done thou good and faithful Son, thou hast indeed not striven in vain and thy reward is just and proper."

And he went back joyfully to Dakota to spread the news amongst his neighbors that others might benefit by his recital and go to Western Canada and reap a like reward.

Mineral Production, 1921

The total mineral production of Canada in 1921 amounted in value to \$172,327,580 as compared with a value of \$227,859,665 in 1920. The

break in prices of most metals towards the end of 1920 foreshadowed a difficult year in the mining industry in Canada. Though there was a decline in the production of most minerals, consequent upon the falling off in demand at the high prices prevailing, the difference in value is no indication of the extent of this decline. Declines in many cases were small whilst some minerals showed an increase in output over 1920.

The principal mineral producing province of Canada in 1921 was Ontario, the value of production being \$54,505,770, 31.6 of the Dominion total. British Columbia came second with a value of nearly \$35,000,000, or 20.3 per cent of the entire Canadian production. Nova Scotia was a close third with \$32,500,000 or 18.9 per cent of Canada's total. Alberta ranked fourth with \$29,000,000, 16.8 per cent of the total output. Quebec was fifth with \$14,600,000 or 8.5 per cent. Manitoba accounted for \$2,075,807 or 1.2 per cent; the Yukon \$1,928,734 or 1.1 per cent; New Brunswick \$1,777,358 or 1 per cent; and Saskatchewan \$1,086,610 or 0.6 per cent.

The leading mineral in point of value was coal which accounted for \$74,273,000. Gold was second with a production value of \$21,327,000, and silver third with a value of \$9,185,007. In order after these came copper, \$7,459,780; nickel, \$6,752,615; natural gas, \$4,902,020; asbestos, \$4,807,052; lead, \$3,855,524; zinc, \$2,758,552; and gypsum, \$1,725,730. The wide distribution of minerals and of mining activity in Canada is indicated in the districts of production. Ontario is the leading producer of gold, silver and nickel. British Columbia leads in zinc and lead whilst sharing with Ontario the position of premier producer of copper. Alberta has become the Dominion's first coal producing province, whilst Quebec has for all time a monopoly on the production of asbestos.

Exceptional Activity at Present

The year 1921 was a depressing one in most phases of business and the Canadian mining industry suffered not unduly in comparison. What stands out in striking contrast is the exceptional activity which has featured the early months of 1922, presaging a year of unusual mining development throughout the Dominion. Whilst much of this development is of a preliminary nature in new fields the fruits of which will not be experienced in greatly enhanced revenue at the end of the year, they portend greater achievement for the mining industry in the near future than it has heretofore accomplished.

This activity is general over the Dominion, evident in the older areas as well as the newer fields. In British Columbia old claims on which work has ceased for some time are being re-operated whilst there are many new discoveries being developed. In Northern Manitoba the prospects are outstanding, and The Pas, the capital of the Manitoba North and gateway to the mineral

fields, has been a scene of ceaseless movement all winter. Prospectors have been journeying from there to the mining claims all winter, utilizing dog teams, and claim records show most unusual figures. More than two thousand prospectors are expected to arrive during spring and summer. There has already been a general rush in the staking of claims in Northern Ontario which has been encouraged by the exceptionally favorable results at the producing gold mines. During the months of January and February alone more than three hundred claims were staked in the Lardner Lake mining division. A revival in gold mining in Nova Scotia this year is predicted.

Sufficient is indicated in the general activity which, throughout Canada, has attended the first months of the year, to prove the general soundness of the Canadian mining industry and a universal faith in its prosperous future. Whilst capital for new enterprises has for some time not been easy to obtain, a gratifying success has been encountered by promoters of mining schemes in the newer Canadian fields and this is coming in at a healthy rate. Whilst the effects of developments under way may not add any substantial increment to this year's production, there is undoubtedly a fairly prosperous season ahead, and beyond that a splendid future for Canadian mining in all its phases.

The Fisheries of Quebec

Complete control of the tidal fisheries of the province of Quebec have been secured from the Federal government by the Provincial government after a striving for administration and possession which has lasted for quarter of a century. The province will now have sole jurisdiction over, and administration of, its tidal waters, except for the waters of the Magdalen Islands which lie in the Gulf of St. Lawrence and which are considered too remote for practical administration of the fisheries by the provincial organization. As regards other waters, however, the province will have absolute control. Fishermen will only be obliged to take provincial fishing licenses and the hatcheries owned by the Federal government will be turned over to the province.

The Province of Quebec, not including Ungava, owing to its many lakes, covering 5,840 square miles, and the waters of the sea, of the river and gulf of St. Lawrence and of the Baie des Chaleurs, 106,206 square miles, as well as of the rivers running through its territory in every direction, 17,999 miles, has fisheries classed amongst the most extensive in the world. These fisheries are of two kinds, the sea fisheries, previously under the control of the Federal government, and the inland fisheries, over which the Quebec government has always had authority. Among other fish the former produces cod,

herring, lobster, mackerel, salmon, haddock, sea-trout, halibut, hake, seals, and whales. In the lakes salmon, trout, eels, pickerel, carp, bass, cat-fish, pike, whitefish, sturgeon, and perch exist prolifically.

Never Sufficiently Exploited

Although the fisheries of the gulf and river St. Lawrence were known to the Basque and Breton fishermen for many years before Jacques Cartier's voyages to Canada, they were never sufficiently exploited to yield even a small proportion of their richness. The first record of Quebec's fisheries is that of 1870, three years after Confederation, when they were worth to the province a sum of \$1,161,551. By 1880 they accounted for a revenue of \$2,631,556; in the year 1915-16 they were worth \$2,076,851; in 1818-19 \$4,568,773 and in 1920, \$2,592,382. Both sea and inland fisheries made fairly consistent progress up to quite recently and transfer of authority is looked for to materially aid them in getting back on this road. In 1912-13 sea fisheries accounted for \$857,004; in 1916-17, \$1,873,225; in 1918-19, \$3,825,182; and in 1920, \$2,420,772. Inland fisheries in 1914-15 were worth to the province, \$132,258; in 1916-17, \$288,437; in 1918-19, \$172,921; and in 1920, \$171,660.

Dispute Now Amicably Settled

The cod catch accounts for easily the most important item in the fisheries revenue of the province of Quebec, being responsible in the year 1921 for \$631,933. The salmon fishery was next with \$157,028 and the lobster catch third in point of revenue with \$143,973. Next in importance was the herring, bringing in \$111,248. Eels and shad account for the greatest individual value from the province's inland fisheries.

In the year 1921 Quebec suffered in common with the rest of the Dominion fisheries from conditions arising from the general trade depression and the loss of considerable export trade built up during the war years and fallen away. The dispute between the Dominion and the province as to the authority in tidal waters resulting in conflicting regulations, dual patrol systems, and the necessity, in the dilemma, of fishermen taking out two licenses, must also be regarded as somewhat of a severe handicap. This is now amicably settled and much in the way of development is confidently expected by the provincial authorities.

Northern Ontario

The world's eye is focussed upon Canada, and this decade is conceded to be hers in promise of growth and development. No small part of this attention at the present time is directed towards Northern Ontario, and this area is being accorded a greater measure of recognition than has ever previously fallen to its lot, but still falls

lamentably short of what its immense natural wealth and increasing annual production justify. Nature must have been in a freakish mood when she planned this northern territory and beamed on it with extraordinary generosity, for in certain resources she has imparted a virtual monopoly, destining that for all time other sections of the globe should be forced in their needs to apply for the treasures of her storehouse.

The industries of this northern territory, springing straight from the very bosom of nature, it is but natural that little was felt of the industrial depression which swamped the rest of the world. The present year is one of promise, and the summer and fall will constitute a season of more than usual activity.

With the disorders in the Rand Mines in South Africa, the Hollinger Mine of the Porcupine Area is left for the year without a rival for the honor of the world's first gold producer.

The demand for pulp and paper is growing once more and creating a resumption of activity in this line.

Silver and nickel industries face pleasanter prospects and agricultural districts set out on the farming year with the best of auguries. The past accomplishments of this and a faith in greater achievement are resulting in an extension of the backbone of the Temiskaming and Northern Ontario Railway from Cochrane, the present northern terminal, whilst just across the border on the Quebec side, the Canadian Pacific Railway is extending its line, at present running from Mattawa to Kipawa, on to Les Quinze, at the further end of Lake Temiskaming, penetrating a rich and fertile agricultural section, long established.

"Northern Ontario" a Misnomer

To get a just perspective of this section of Ontario, the mind must be disabused of a conception which is fairly general and which would seem to be almost inevitable. The term Northern Ontario is apt to convey the impression of close proximity to, if not actually within, the Arctic circle.

In considering the northern area of Ontario, it is necessary to remember and to fix firmly in mind, that this province has its southernmost boundary very much further south than the other Canadian provinces, and that the projection of James Bay from the north brings the northernmost boundary very much farther south than is the case with the remainder of the Canadian North. Cochrane, which is the limit of present railroad communication to the north of the province, is often mentioned as an Arctic point, whereas it is, in reality, practically in the same latitude as Winnipeg, and hundreds of miles south of Edmonton which is the gateway to the rich Alberta northland which yet extends beyond it for hundreds of miles towards the Arctic.

Northern Ontario contains an area of 330,000 square miles, composed of eight great districts, with vast resources of soil, timber, minerals and water power. There are almost sixteen million acres of land suited to various phases of agriculture. This area of diversified wealth is of an equable climate as its latitude would suggest, and conducive to healthy and comfortable living conditions. As will be seen from the following, the development of the past decade has been most startling, but this stands merely as brief index to the great future in industry and agriculture this area must inevitably experience.

Early Mineral Discoveries

In 1884, during the construction of the Canadian Pacific Railway through Ontario, a deposit of copper ore was discovered. It was opened on a commercial scale and found to be a deposit of copper and nickel. Methods of separating and refining were developed, and in this chance discovery originated the great nickel industry of the continent. In a circular ledge round an area some thirty miles by sixteen, is contained eighty-five per cent of the world's entire supply of nickel. At varying periods along

this ledge are to be found the mines operated by the three large corporations, controlling the Canadian nickel industry. The Sudbury district supplies two-thirds of the world's consumption of nickel. Since 1887 approximately 17,000,000 tons of nickel-copper ore have been smelted in this district, delivering 433,831 tons of nickel and 254,104 tons of copper.

North from the nickel producing area, the silver country, known the world over as the Cobalt region, is penetrated—the globe's richest silver mining territory. This thriving and extensive industry also had its inception in a chance discovery. The Temiskaming and Northern Ontario Railroad was projected as a colonization road into the rich farming area to the north known as the Clay Belt. In the autumn of 1903 the members of the railway construction parties made a discovery which changed the future traffic and purpose of the road when rich silver deposits were located and a rush ensued. Ever since, the district has been producing silver with substantial yearly increments up to the year 1916 when the pinnacle was reached, the war years and those of the aftermath registering somewhat of a decline. In its producing history since 1903, the Cobalt area has accounted for silver shipments aggregating more than 300,000,000 ounces valued in the neighborhood of \$200,000,000.

Gold Mining Areas

Further north again in Northern Ontario, the gold mining country is encountered. It is difficult to define this or set its boundaries as new discoveries are continually extending the limits, leading to the belief that the past ten years have barely taken a small toll of what nature has hidden away.

Gold history in Ontario dates from the discovery of the precious metal in the Porcupine area, which still remains the prime provincial and Dominion producing area, though the newer fields of Kirkland Lake, Larder Lake and others are rivals in development and exceedingly full of promise. The production of the Northern Ontario fields has in the past decade elevated Ontario to the proud position of the first gold producer of the Dominion.

In this time the area has accounted for an output of more than 4,000,000 ounces valued at above \$73,500,000. The province's production in 1921 was 707,470 fine ounces valued at \$16,322,629, and the extensive developments which are taking place during the present year make the attainment of a \$25,000,000 production within the bounds of possibility within the next year or two. Of last year's total, \$10,114,719 was shipped in bullion by the Hollinger Mine of the Porcupine district, and in the last ten years this unit has accounted for more than \$50,000,000. This year the Hollinger is expected to lead the world as an individual producer, exceeding the output of the Rand mines of South Africa.

The striking and gratifying feature about gold production in Northern Ontario is that there is no exhaustion yet in sight, as has rapidly transpired in the case of the Yukon and other promising fields; instead of diminishing in extent and value, the deeper mines go and the increasing number of discoveries that are made promise more remarkable things for the future. The Hollinger, for instance, which is such a voluminous and rich producer, is only as yet at the 950 foot level, whereas diamond drilling down to 3,000 feet has disclosed the same promising indications of valuable ore.

Activity in Pulp and Paper Production

Still another prolific resource of this wonderful territory lies in its vast forest stores of spruce and poplar, which has brought about the creation of a thriving pulp and paper industry which is expanding rapidly and bringing many countries of the globe to its confines for their supplies of newsprint and other paper. It is estimated that there are 200,000,000 cords of pulpwood in Northern

Ontario, and already dotted over the forest area and utilizing this raw material, seven pulp and paper companies have established plants which account each day for a combined production of more than 1,100 tons of newsprint, about 600 tons of groundwood and 700 tons of sulphite.

The Abitibi company at Iroquois Falls alone produces 500 tons of newsprint per day and has in operation the two largest paper making machines in the world. In Ontario there is \$109,169,597 invested in the industry, more than 10,000 people find employment in it, and in 1920 it had a production of \$113,415,866.

Those who in their mind locate Canada's richest fur-breeding ground in the far north-west will be surprised to learn that Northern Ontario is, in reality, the first fur-producing area of the Dominion. In the fiscal year 1920-21, for instance, Ontario accounted for 734,493 pelts valued at \$3,038,560, considerably outdistancing other Canadian areas, and practically all of this came from the northern part of the province. The year was by no means a normal one or typical of average production, and a clearer indication of the province's usual contribution to the fur industry is found in the record of the previous year when it also led the entire Dominion with an aggregate value of \$6,414,917.

Possibility of Agriculture

Agriculture in Northern Ontario has been sufficiently long established and exhibited a sufficient degree of progression to indicate the enormous possibilities of more adequate settlement and the great future awaiting farming in that territory. Thriving and prosperous farm settlements are to be found tributary to such towns as Liskeard, Englehart, Haileybury and Cochrane, but vast remaining tracts await such enterprise as have developed the mining districts. Most of the land is admirably adapted to mixed farming and has such advantages as a plenitude of fuel and fencing, shelter for stock, good water, beautiful scenic conditions, employment in the winter months and available markets for pulpwood.

The most pronounced feature of Northern Ontario to a traveller from outside is its modern aspect, the bustling up-to-date towns, the elaborate business houses, the comfortable residences and tranquil living conditions. Should he enter associating in his mind this territory with the early days of the Yukon, Alaska, or California, he is speedily disabused. The color and romance are there, but the lawlessness, the disorder and discomfort are absent.

The mining of precious metals has become an industry for elaborate and expensive machinery instead of the sporadic efforts of lone miners. Gold and silver mines are adjacent to modern, thriving towns, which have close touch with the railroad and communication with the rest of the world. Pulp and paper companies have boldly created towns about the scenes of their operations.

Railway and Urban Extension

Railways penetrate the fastnesses with the progression they bring in their wake and nowhere can one get far from a railroad. Timmins is the premier gold mining town; Cobalt the silver city; Sudbury the centre of nickel activity; Iroquois Falls one of the thriving little burghs which paper companies have evolved about their activities. Farming towns are many, all of a kind to be a credit to older and any agricultural districts.

Northern Ontario has an appeal to the traveller, the tourist, sportsman, business man, and investor. In the north of one of Canada's oldest provinces a new and distinctly individual territory is being hewn out of primal vastness. It is an area of tremendous wealth, the limits of which new disclosures are constantly extending, and of which adequate toll cannot be taken for many decades.

The record of the past ten years in Northern Ontario is a bid for fame possibly unequalled elsewhere in the world. Its past achievement, its present diversified production, its boundless future possibilities entitle it to the fullest recognition and investigation.

Motion Picture Films

A print of each of the following films issued by this department is deposited with the representatives listed on the back page. These are available upon application for use by schools, theatres, clubs, societies, boards of trade, and other associations and organizations.

Homemaking by Irrigation.—Irrigation farming in Southern Alberta, the various operations and their results.

The Land of Promise.—Featuring the well-known agricultural section of Battleford, Saskatchewan.

Opportunity.—Illustrative of Western Canadian opportunity, more specifically in the district of Lloydminster, Alta.

Livestock and Dairying.—The fine status and remarkable progress of this industry in Western Canada picturized.

Taming the Last West.—Depicting the evolution of the Canadian West from buffalo range to a modern agricultural area.

The Sunny Side of Rural Life.—The farmer on holiday, showing that life in Western Canada is not all work.

The Evolution of a Grain of Wheat.—The life of wheat seed from the time it is sown until its progeny enters into the composition of a loaf of bread.

Apple Growing in Evangeline's Land.—Orchard cult in the region Longfellow's poem made famous.

The Apple Harvest of the Okanagan.—Gathering and shipping apples in the beautiful British Columbia valley.

Curing Fish in Nova Scotia.—Depicting the various phases of curing and smoking fish in the Maritimes.

The Canadian Sardine.—The sardine caught, canned and distributed.

Some Water Powers of Eastern Canada.—The beautiful and powerful waterpowers of the Eastern Canadian provinces.

The Silver Fox Industry of Canada.—The domestic ranching of silver foxes in Prince Edward Island.

New Homes Within the Empire.—The camera follows the progress of a British immigrant from the first awakened interest in Canada till when he settles on a Western farm.

Departmental Publications

Any of the following publications will be sent free on request.

The Prairie Provinces of Canada.—A descriptive statistical booklet on the provinces of Alberta, Saskatchewan and Manitoba, with full information on the opportunities for farming in the West.

Business and Industrial Opportunities in Western Canada.—Full listings of industries existing and business openings in the provinces of Western Ontario, Manitoba, Saskatchewan, Alberta and British Columbia.

Why Canada.—Reliable and comprehensive information for the United States manufacturer, showing the advantages of establishing his industry in Canada.

Canada's System of Government.—Canadian government briefly outlined to portray its democratic traits.

The Story of Canadian Nickel.—History of the nickel mining industry.

Canadian Oil Exploitation and Prospects.—An expert engineer's history of Canadian oil development and future possibilities.

Canadian Water Power Development.—Authoritative and exhaustive survey of water power reserves and possible development.

Education in Canada.—The wide scope of Canadian education depicted to show that a settler need have no apprehension in this regard.

A Canadian Grain Handling Plant.—How Canadian grain is stored and shipped. Authoritative article on Canadian elevators.

Value of a Settler to Canadian Railroads.—Computation from reliable statistics of a farming settler's revenue-producing worth to Canadian railroads.

Bituminous Sands of the Athabasca Region.—Description with known values, and possibilities of development of the widely known tar sands of Northern Alberta.

The New Canadian Oil Field.—Dealing with the Arctic oil region of the new strike.

Water Powers of the Maritimes.—Authoritative article on the undeveloped power systems of the Eastern provinces.

Water Powers of Manitoba.—The water powers of this province dealt with exhaustively.

Oleomargarine.—History of oleomargarine in Canada and its future prospects.

Synopses of Natural Resources.—Forty-five pamphlets dealing briefly but concisely with Kaolin or China Clay, Oil Shales, Mica, Fluor-spar, Asbestos, Molybdenum, Magnesite, Fruit, Flax Fibre, Nickel, Coal, Clays, Salt, Copper, Zinc, Silver, Gold, Pyrites, Iron, Potash, Talc, Feldspar, Platinum, Phosphate (apatite), Manganese, Graphite, Cement, Barytes, Gypsum, Irrigation, Petroleum and Natural Gas, Corundum, Sulphates of Sodium and Magnesium, Timber and Pulpwood, Fish, Fur, Peat, Grazing Lands, Mineral Waters, Building and Ornamental Stone, Whaling, Sealing, Wheat, Oats and Barley, and Water Powers.

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Ask the Canadian Pacific about Canada



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Migratory Birds Convention Act

THE Act respecting certain conventions between Canada and the United States for the protection of migratory birds which was ratified at Washington in December, 1917 and is summarized, with amendments, in a government paper issued last fall, is beginning to make itself felt. At least, so says Mr. Jack Miner, student of wild life and lover of the great outdoors, who, on his farm near Kingsville, Essex County, Ontario, some years ago set aside an area as a Birds Sanctuary.

Briefly, the Act defines the opening and closing dates for shooting migratory birds or the taking of their eggs and nests, the bag limits, the closed season, the kinds of guns and appliances permitted sportsmen, the penalty for violating the law and the names of the birds that come within the protectory clauses of the Act. It is designed to protect and propagate the birds during the mating and breeding season and obviate their extinction both north and south of the international boundary, leaving to sportsmen and those who depend upon the game for food supply, opportunity to indulge their purpose.

Mr. Miner—or “Jack” as he likes to be called, bases his assertion on the number of wild geese and ducks which annually visit his Sanctuary ponds. “Since the Act went into effect,” he declares, “I have noted the steady increase in the number of birds that come to sojourn with me. The first year—some years ago,—I definitely offered protection and feed to these birds, seven only visited me; but they came back the following one with eleven others and year by year, they have returned in increasing numbers until this spring between three and

four thousand are now to be found on the Sanctuary. I attribute the great increase in the last three years to the Migratory Birds Act.”

Mr. Miner, who is a philosopher as well as friend of bird and beast, is an enthusiast on wild life conservation. From childhood he has lived on the farm he now occupies, which in his youth was uncultivated forest land, and mingled daily with the wild things of the woods. He has made friends with them and come to understand them. “When you kill a bird in the spring,” he says, you’re depleting bird life; you’re taking a mate away from some other bird and wiping out untold, unborn families. It is a moral crime for anyone to kill any bird at mating or hatching time;” and he faithfully practices what he preaches.

Hosts of valuable birds that nest in Canada spend their winters in the United States. To grant these the protection their value warrants, the Migratory Bird Treaty was ratified. The open seasons for game birds were made of uniform length in all States and Provinces and there is no spring shooting. Insect eating birds, one of the chief natural enemies of insect pests which ravage forest, garden and orchard, are granted continual protection.

The treaty is a success for it is bringing back the birds.

About ten acres of the farm is set aside as the Sanctuary and protection is extended for two miles on either side. In this area, Mr. Miner made an artificial pond and scattered corn on the banks and the shallow bottoms. Last year, 7,000 bushels (on the cob)

were fed to them, and now, year after year, in increasing numbers, in the early spring and late fall, he is visited by his feathered friends. They know him and trust him. Sportsmen who have attempted to approach wild geese near enough for a sure kill, know the difficulty of accomplishing their purpose, know the sagacity and intelligence of the species. Yet Mr. Miner walks carelessly amongst them and brings his friends and visitors with him.

Wintering along the shores of the Gulf of Mexico, the coasts of Florida and the mouth of the Mississippi, wild geese migrate northwards in the early spring to breed in the vicinity of Hudson and James Bay, Labrador and Baffin Land. In the course of their long flight they

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Norman S. Rankin, *Editor of Publications.*
E. L. Chicanot, *Asst. Editor.*

descend to rest on ponds and lakes wherever night finds them and prior to the passage of the Migratory Birds Act, were slaughtered in great quantity. This slaughter now, to a great extent, has been eliminated.

Their food value to those who live in what are known as the Barren Lands of the North is great and after the breeding season, when moulting, thousands are easily killed and laid away in the frozen ground for future consumption.

Mr. Miner is carrying on his altruistic work from the sheer love of it. He is increasing the size of his Sanctuary to one hundred acres, handling the active administration of his farm and brick and tile plant to his sons, and is going to devote all his time and energy to the welfare of the birds.

He grows his own corn for feed purposes and while he is in receipt of small annual grants from the Dominion and Ontario governments, his books show a deficit. His example and propaganda is making itself felt in widening circles and the demands for his lectures from points in both Canada and the United States are steadily increasing. It is due to the efforts of bird lovers both north and south of the boundary, the late Dr. Gordon Hewitt of Ottawa and Dr. Harnady of New York, that the Migratory Bird Act came into existence.

General Agricultural Situation

*By J. Dougall, General Agricultural Agent,
C.P.R., Montreal*

The Bureau of Statistics' final estimate places the Canadian wheat crop of 1921 at 300,858,000 bushels. Of this total 95 p.c., or 288,316,000 bushels are estimated to have been of merchantable quality. It is usual also to deduct 3 p.c. from the total crop, or say 9,026,000 bushels as representing the average loss in cleaning. This makes the net merchantable crop to be 279,290,000 bushels. The exports of wheat and flour expressed as wheat for the seven months of the current crop year ended March 31, 1922, were 131,851,000 bushels, and the quantity on hand at the end of March is placed at 114,936,000 bushels, making the total accounted for to 246,787,000 bushels. This quantity deducted from the net merchantable crop leaves 32,503,000 bushels. Of this quantity about 30,000,000 bushels will have gone into the mills for home consumption during the seven months ended

March 31, 1922; so that the amount of the wheat crop of 1921 unaccounted for is thus reduced to about 2½ million bushels.

The total quantity estimated as in farmers' hands on March 31, 1922, viz., 41,649,000 bushels is more than sufficient to seed say, 23 million acres this spring at the average rate of 1½ bushel to the acre, the area of spring wheat for 1921 being estimated at 22,540,589 acres.

Splendid Spring Indications

The general situation over the Dominion, as applied to crops for 1922, is entirely satisfactory. There has been ample rainfall in all parts of the country, and whilst little work has been done so far owing to the wet condition of the land a small acreage is seeded in Alberta and Saskatchewan. The increased market price for all cereals is naturally encouraging the Canadian farmer to seed as great an acreage as possible this year.

Final provincial figures of the acreage ready for seeding are not yet available, but preliminary estimates have been made as follows with the corresponding figures of 1921 for comparison:—

	Manitoba		% Inc.	% Dec.
	1922	1921		
New Breaking.....	157,650	188,200	...	...
Summerfallow.....	1,612,000	1,410,000	14.3	16.2
Fall Plowing.....	3,133,000	2,730,000	14.8	...
Saskatchewan				
New Breaking.....	616,033	549,837	12.0	...
Summerfallow.....	5,908,410	3,075,751	92.9	...
Fall Plowing.....	748,000	748,000 (approx.)	...	...
Alberta				
New Breaking.....	517,455	485,852	6.5	...
Summerfallow.....	2,276,000	1,833,700	24.1	...
Fall Plowing.....	1,500,000	1,764,325	...	14.9
Total Acreage Prepared in the Three Provinces				
Manitoba.....	4,902,650	4,328,200	13.3	...
Saskatchewan.....	7,272,443	4,373,673	66.3	...
Alberta.....	4,293,455	4,083,877	5.1	...
TOTAL	16,468,548	12,785,750	28.8	...

British Columbia.—Reports show that, as a whole, fruit trees have come through the winter in good shape and an increase in production is anticipated this year.

Alberta.—The province experienced heavy rain and snow during the latter part of April. Little work has been accomplished so far but the ground is in excellent condition with ample moisture.

Saskatchewan.—Rain and snow fell all over the province in April. Some seeding has been done though in general there has been little work on the land. Indications are that the seeded acreage will be normal.

Manitoba.—Rain and snow have been plentiful and the end of the month found the ground too wet for work though the conditions all over the province are considered good.

Ontario.—Situation eminently satisfactory though rain and snowfalls have kept the farmers off the land. Fall wheat came through the winter in good condition as did all fodder crops.

Quebec.—The rainfall has been very heavy during April and little work has been accomplished so far though some farmers have made an attempt at spring operations.

Maritime Provinces.—Little work done so far, though there is ample moisture and the best of conditions prevail. Potato prices are causing discouragement for the moment.

Livestock Situation.—The livestock situation shows little sign of improvement and it is generally anticipated that the result of the new United States tariff will be the compulsion of Canadian producers to find markets other than the United States—in other words Great Britain and possibly the continent. Should the British embargo be removed it is quite certain that feeder cattle will be disposed of to the British feeder as stores, this as a temporary measure, as there is no doubt the Canadian beef producer will be forced to finish his cattle younger and place them on the British market in a finished condition so as to reap the greatest profit.

Hog Situation.—This has shown little improvement so far and Canadian live hog prices are out of line with export offers. A very strong effort is being made by the Dominion Department of Agriculture and the Departments of Agriculture of various provinces together with the Canadian Pacific Railway to encourage the farmers in the production of bacon hogs suitable for British trade and it is hoped that by fall some results will have been attained.

The Okanagan Apple Industry

From an annual production of a quarter of a million boxes of apples in 1911 to over three million boxes in 1921, is the remarkable record of the Okanagan Valley, British Columbia. The valley is pre-eminently suited for fruit culture. Temperature, precipitation, soil, transportation, markets, etc., are all in its favor. The construction of irrigation systems of considerable magnitude, has eliminated the danger of drought, and has also had the effect of making it necessary for the growers to cultivate their holdings intensively in order to justify the expenditure. The expansion of this industry can be attributed to three causes: careful selection, packing and handling; extensive advertising; and co-operative selling organizations, controlled entirely by the growers, which markets the greater percentage of the apples produced in the valley.

Packing has probably been the greatest factor in popularizing Okanagan Apples. Of the finest quality, these luscious bright-red apples are each wrapped with a thin sheet of paper, imprinted with the trade-mark of the organization and the slogan "O.K." They are then carefully hand-packed in small compact boxes, which are also labelled. This neat, attractive manner of packing apples has a psychological effect on the consumer, to whom the idea of purchasing apples individually wrapped in a sanitary cover, with unbroken skins and at a price for which he would have had to pay for an apple picked indiscriminately out of a large barrel filled with many varieties, and which may be bruised and dirty is pleasing.

Three Thousand Commercial Orchards

Extensive advertising campaigns, setting forth the quality, sanitary packing and moderate price of Okanagan apples, are carried on every year by the co-operative societies throughout the districts where their product is sold, more particularly in Western Canada.

According to the Department of Agriculture there were in 1920, 3,000 commercial orchards in

the Okanagan Valley, on which there were approximately a million apple trees. To handle the produce of these fruit-ranches, the co-operative organizations have erected some sixty packing houses in the Valley to receive apples from the growers' wagons or trucks, weigh them and issue receipts for weight, grade and pack the fruit, store it, and load it into railway cars. These plants are equipped with the most modern machinery for the economic and efficient handling of apples.

Prior to 1919, Western Canada consumed practically the entire apple output of the Okanagan Valley, but with increasing orchards, scientific handling of trees, production increased to such an extent that during the season 1921, eighteen hundred carloads of apples, or 50 per cent. of the valley's crop, were shipped to other markets, of which the United States and Great Britain were the most important. All exports to the United Kingdom were despatched by steamship by way of Vancouver and the Panama Canal. In the United States shipments were made as far East as New York.

It is planned to develop these new markets intensively, as with the Western Canadian market unable to absorb the total production and the crop annually growing larger, permanent markets must be found if the industry is to be run on a stabilized basis. If the enthusiastic reception accorded to the initial shipment of Okanagan apples in the United States and Great Britain is to be taken as an augury, then there seems little doubt but that these countries will be able to take all the surplus apples grown in the Okanagan for many years to come.

Irrigation Legislation in Western Canada

*By James Colley, Secretary, Western Canada
Irrigation Association, Calgary, Alberta*

Irrigation received a considerable share of the attention of the members of the Alberta Legislature during the session that has just closed.

Bills making provision for the guaranteeing of the bonds of the United Irrigation District and the Macleod South Irrigation District were passed and a section was added to the Irrigation Districts Act 1922, giving power to the boards of trustees of irrigation districts to accept listings of lands within their respective districts and to conduct negotiations for the sale or other disposal of these lands, subject to the general control of the Irrigation Council.

In the case of the United Irrigation District the government guarantees amounts to \$645,000. The district covers an area of 61,195 acres, of which 23,000 acres are irrigable, between the Waterton and Belly Rivers and west of the Blood Indian Reserve in Southern Alberta.

The bill for the South Macleod District embracing an area of approximately 96,000 acres, of which about 60,000 acres may be considered

irrigable, lying south-west of the town of Macleod and west of the Belly and Waterton Rivers, gives the Government of Alberta power to guarantee the bonds of this district up to \$2,050,000, provided it is satisfied that satisfactory arrangements are made as to the settlement of the surplus lands in the district.

Estimate of Construction Cost

In his report of the South Macleod Irrigation District which was tabled in the house during the session, D. W. Hays, the consulting engineer to the Alberta Government, estimates that the cost of construction of the works of the South Macleod Irrigation District will amount to \$1,778,657, or \$29.81 per acre on the basis of 60,000 acres of irrigable land in the District. Allowing for the discount of the sale of the bonds and their capitalization for a period of two years during the construction of the scheme, Mr. Hays estimates that a total of \$2,042,279 will be required.

The bill giving the trustees of the irrigation districts power to accept listings for the sale of the surplus lands in these districts is a practical indication that the matter of securing settlers for the irrigated areas is being attended to.

The report of the Survey Board for Southern Alberta—the Royal Commission that was appointed by the Government of Alberta for the purpose of inquiring into the conditions in that part of the province resulting from a succession of years of drought—came in for considerable discussion in the earlier part of the session and was frequently referred to throughout the sitting. In this report irrigation is considered to be the main solution of the problems of Southern Alberta. Another report dealing with irrigation that was tabled during the session was the first annual report of the Irrigation Council.

Some Dairy Records

No sooner does Canada turn her hand to some new phase of agricultural endeavor than she achieves unqualified success in the departure and proceeds to create records. This has been repeatedly illustrated in her brief history and now the Dominion, in agricultural phases previously considered impossible to her soil and climate, has surpassed older countries where agriculture has been an established industry for generations. It is not long since Canada commenced her departure from the tremendous cattle herds and huge wheat fields which formed the general conception of successful agriculture and by diversifying with dairy cattle made a bid for dairying fame, but already she has accomplished phenomenal things in this direction, exporting dairy products where previously she imported, and meeting on what has come to be an equal footing of quality the old established dairy countries of the world.

With the interest awakened in dairying, Canadian farmers, as is typical of all their activities, were satisfied with nothing but the best, and set about producing the best dairy cows possible, in which laudable work they received the active co-operation of the governments. They have now developed herds which are considered second to none on the globe, and each year Canadian animals are purchased by other countries to build up their own herds.

Every year sees Canadian pure-bred dairy stock purchased by farmers in the United States. They have gone to Australia, Japan, Peru and the West Indies. Holstein stock, first imported from England, has had its progeny brought back to improve British herds. For a country of such recent dairy development this is a very creditable showing.

Alberta Cow Sets Pace

Though from the outset Canadian dairy production records compared very favorably with those of all dairy countries there was nothing signal about them until "Rosalind of Old Basing," a Jersey of Red Deer, Alberta, won for herself the distinction of being the champion milch cow of the British Empire, when the Dominion experienced the gratification of true accomplishment and felt justifiably proud. On a test conducted over three consecutive years her highest milk yield for one day was 52 lbs. for one month 1,471½ lbs. and for one year 15,700 lbs. The average test for butter fat was 5.16 per cent and she produced in one year 1,031.89. The actual returns for cream and skim milk from this queen of cows in the three years was \$1,007.50, which it must be remembered, was in a time when butter prices were very much lower than they are now and a thousand dollars had greater representative value.

This achievement stimulated Canadian dairymen to emulation and pointed the way to yet greater things. Later Bella Pontiac, a Holstein-Friesian, owned by T. A. Barron, of Brantford, Ontario left the Alberta cow behind and made a world milk production record under the official test of the Holstein-Friesian Association. In twelve months she produced a total of 27,017 pounds of butter; 1,259 pounds of fat; and 1,573.75 pounds of butter. This was far in excess of any world's milk record previously set, though since surpassed, and entitled Bella Pontiac, for some time, to the title of the world's record cow.

Now another Canadian cow has risen to fame setting a new Canadian record for combined milk and butter production which also, from the standpoint of strictly official tests, is a world record. This cow is De Kel Plus Segis Dixie, of Vaudreuil, near Montreal, Quebec, which in 1921 produced 32,632 pounds of milk and 1,439 pounds of butter. The test was conducted under the supervision of chief inspector C. S. Wood and R. S. Hamer, Dominion live stock commissioner. Neither in milk alone or butter alone is Dixie's record a Canadian one, but for combined production she is the first in Canada. Only one cow has surpassed this record in the world, Segis Pieterje Prospect, of the Carnation Farms, and this was effected under merely semi-official tests and not under the eye of a government official so that the Quebec cow might with justification claim the world's combined butter and milk production record.

An Unquestioned World Record

Since the Vaudreuil cow's fine achievement a world record in another class has been made by a heifer "Echo Sylvia Laura" owned by W. D. Wright of Brockville, Ont. which holds the world's championship for butter and milk production for a heifer with first calf. This young animal, born in April, 1919, in seven days produced 505.5 pounds of milk and 36.64 pounds of butter, and in thirty days 2230.5 pounds of milk and 141.10 pounds of butter.

A new four-year old Canadian milk production record has been set by the Ayrshire "Buttercup of Glenholm" owned by Prof. J. D. Clark, superintendent of the Experimental Station here, which under a 365-day test produced 16,444 pounds of milk and 662 pounds of fat, the milk production being 400 pounds in excess of any previous record.

Canada is not particularly concerned in the matter of claiming the world's record being fully conscious that she is realizing what she set out to accomplish in establishing a thriving dairy industry. Production is increasing rapidly, especially in the Western provinces, and the Canadian products have found great favor, in the face of

strenuous competition, on foreign markets. The type of dairy animal Canada has produced is in universal demand and individual production records are equal to those achieved elsewhere, whilst equal care is given to the quality of the product. In every phase there is proof conclusive of a thriving unsurpassed dairy industry in Canada.

Opportunities in Poultry Raising

Exceptional opportunities exist in Canada to-day for engaging in the agricultural or commercial activities of poultry raising and egg marketing. In this respect Canada faces a peculiar situation for whilst, at the present time she is exporting eggs to foreign countries at the rate of about six and a half million dozen annually, she is importing for domestic consumption, nearly five and a half million dozen.

It is only of recent years, since Canada has diversified the larger issues of grain growing and livestock raising with lesser, though no less necessary, agricultural pursuits, that poultry raising has been entered into on what might be considered the proportions of an important industry. This interest in poultry raising has been fostered and encouraged in every way by government campaign and propaganda and has resulted in a gratifying increase in the number of poultry and the production of eggs. Whilst Canada has been successfully asserting herself as a serious competitor amongst the dairy countries of the world, she has also been developing in a surprising manner as an egg marketing nation. Though her progress in egg production has been little short of remarkable, the export trade, from popular demand, has increased in like proportion yet she continues to send out practically the same amount as she is under the necessity of importing for her own use.

It is only within the past few years that Canada has managed to obtain a lead, small as it is, in egg exports over imports, due to phenomenal development in the home industry. Since 1909 Canada had the unenviable position of importing each year more eggs than were exported. Total exports in 1911, for instance were 92,164 dozen against imports of 2,378,640 dozen. In 1915 exports amounted to 965,640 dozen only against 4,354,611 dozen. By 1918 the tide had turned and exports were 4,896,993 dozen against 4,274,452 dozen. The favorable trend has continued due to activity in the promotion of the industry at home and in 1921, exports were 6,579,853 dozen against imports of 5,341,611 dozen.

Thirty-Four Million Hens

The Bureau of Statistics reports that there were 34,340,474 hens in Canada in 1921 as against 25,942,105 in 1920. During 1921 these hens were responsible for a production of, as near as can be estimated, 161,971,000 dozen eggs as compared with the previous year's production of 121,604,000 dozen.

Poultry farming has long been popular and profitable in Canada, especially in the Maritime provinces and British Columbia, but the increase in recent years has been brought about by the adoption on a greater and wider scale of poultry raising by mixed farmers and those following agricultural pursuits of other natures who have found this branch increasingly profitable and returning quick and steady revenues. In this regard it is significant that Saskatchewan, the first wheat province, is, in proportion to its population, the first poultry province of Canada with 9,000,000 hens, followed closely by Ontario. It is equally significant that Alberta, another Prairie province, takes third place and that Manitoba, the third of the trio, is bracketed fourth with Quebec.

The opportunities lying in the poultry industry in Canada are self evident from a survey of the facts. The export trade is developing to a larger extent each year as the popularity of the Canadian produce increases and the demand is greater. In the decade 1911-1921 export in eggs has grown from 92,164 dozen to 6,579,853 dozen. Despite the tremendous increase in production practically an equal amount has to be imported to fill domestic needs. Room exists for wide expansion in production.

Insurance in Canada

In view of acute business conditions prevailing during the year 1921, the amount of fire and life insurance issued in Canada was very creditable. According to the Federal Bureau of Statistics \$514,687,611 represents the net amount of new life insurance issued and paid in cash in this country last year, which is a decline from the previous year when the total was \$630,110,900, but nearly twice as much as was written in 1918. While the value of life insurance issued during the period under review was \$116,000,000 less than in 1920, the number of policies was only about 7,000 less, having been 648,421, as against 655,176.

Canadian companies in Canada were again in the lead in the amount of life insurance written, with a total of \$332,637,029, as compared with \$387,519,766 in 1920. Canadian companies issued outside of Canada \$86,362,883, as against \$100,624,400; British companies \$15,660,737, compared with \$14,976,038; foreign companies, almost entirely American, \$166,388,945, as against \$227,615,096. As will be noted British companies were the only ones to register increased life insurance business in 1921, both Canadian and American companies recording decreases.

Fire Policies and Premiums

The past year was not a very favorable one for fire insurance, net losses having been \$27,463,837, or equal to 58% of the premiums. The premiums in 1921, however, showed an increase

of \$6,671,828 over those of the preceeding twelve months. The net amount of risk by all fire companies in Canada last year was \$5,987,358,-051, compared with \$5,969,872,278, an increase of \$17,485,773. Of this \$1,046,125,611 is held by Canadian companies; \$3,039,109,169 by British companies; and \$1,902,123,271 by foreign companies.

The total premium income on all fire and life insurance by all companies in 1921 was \$146,066,223. Of this amount British companies accounted for \$26,331,247, of which \$23,413,000 was for fire and \$2,917,418 life insurance. Foreign companies' share amounted to \$49,595,481, about \$49,000,000 of which went to American concerns. The balance, or \$70,139,495 went to Canadian companies. In addition to this business Canadian companies wrote a great deal abroad, the net premium income on the latter having been \$14,800,000.

All things considered, 1921 was a fair year for insurance companies in Canada and the business transacted denotes a keener interest in Canadian insurance; the attention evinced by American companies in Canada as a field for investment, presages the investing of further capital in this country.

Vancouver Island

Vancouver Island is widely known as one of the fairest spots in Canada, a region where the wild majestic grandeur of the Canada west of the Rockies, blends in harmony with a calmer beauty that, in its charming simplicity, is reminiscent of rural England. As such it is extremely popular with the tourist, the sportsman, the fisherman, and the general holiday-maker who yearly set out in numbers over the fine roads which lead out of Victoria, the gateway to the interior. During last June, July and August, about twenty-five thousand tourists passed through the city of Victoria and on a very conservative estimation they left on the island the sum of \$500,000. The hundreds of miles of splendid roads available for motorists attract numbers of people holidaying in this manner and from April 1st to the end of 1921 a total of 627 automobiles from the United States toured the island.

The beauty of the island is so striking, its appeal to the holiday-maker so alluring, its atmosphere so suggestive of leisurely, unruffled existence that the tourist, whizzing through in his car over its comfortable roads, receives only a dim enshadowed impression of its tremendous economic importance. He probably does not realize that the picturesque little homesteads he flashes past are for the main part self-supporting and accounting each year for a substantial agricultural output. He does not take into consideration the prosperous farms and the resources of commercial timber existing back of the motor roads. Where a turn in the trail gives him a glance of the ocean he perhaps has no definite knowledge of the great wealth of the fisheries of the waters surrounding the island.

Area and Population

Vancouver Island is 285 miles in length and averages in width 60 miles, its area being more than twice that of the country of Wales or the state of Massachusetts, and nearly twice the area of the states of New Hampshire or Vermont. Nature endowed it with a great and varied wealth the basis of which is the island's rich and fertile agricultural land which makes possible the production of

a wide latitude of crops and fruit growing and mixed farming such profitable pursuits.

The population of the island was returned at the 1921 census as 116,730, an increase of nearly 300 per cent over that of 1911.

The enormous agricultural acreage of Vancouver Island has yet largely to be settled and rendered productive. Though there are many fine and prosperous farms only 34,000 acres was under cultivation last year being given over to the varied crops of mixed farms and to fruit growing and berry culture. The island's yield of grains, peas and beans was 409,583 bushels; of hay, clover and alfalfa 26,700 tons, and of potatoes and vegetables 27,024 tons. Strawberries accounted for a revenue to the island of \$173,344; loganberries \$26,587; cherries 23,102; plums and prunes \$10,950; gooseberries, currants, raspberries, etc. \$29,379. In 1921 there were 506 apiaries on the island with 1,733 hives which produced 17,510 pounds of honey, a production considerably below the average year.

Minerals and Fisheries

The minerals comprise an extensive variety among them being coal, copper, iron, gold, silver, quicksilver, marble, limestone, and other building materials. Coal is the most valuable of these minerals in point of present day production. It has been mined for seventy years and has come to represent about eight ninths of the Island's total mineral production. There were 6,500 men employed in coal mining in 1921 effecting a production of 1,656, 428 tons valued at \$8,282,140. The total value of mineral production in 1920 was \$9,773,036 made up of coal \$8,491,270; metalliferous metals \$15,488; non-metalliferous metals \$1,243,439; and other minerals \$22,839.

The most prolific fishing grounds of the British Columbia coastal waters are in those surrounding the island and these account annually for the greater part of the province's fisheries revenue. Twenty-one species of fish-food is secured off the island the most important species of which are salmon, halibut, cod, herring, flounder and sole. The fishing grounds in 1921 accounted for a revenue to the Dominion of more than \$22,000,000, or more than that of any of the provinces engaged in this industry. The whaling industry accounted for a catch of 430 whales, the oil of which was extracted and the various parts utilized in the whaling plants existing there.

Lumbering Activities

Commercial timber on Vancouver Island consists of Douglas fir, red cedar, hemlock, balsam, spruce, and yellow cedar and comprises 116,912,900,000 board feet of standing timber. Timber scaled in 1921 totalled 273,752,000 which does not, however, by any means represent the extent of the annual cut as much of the log output is sent to the mainland to be scaled. There are fifty-eight sawmills in operation which have a daily capacity of approximately 2,152,000 B.M. feet. Vancouver Island has two pulp mills, one at Port Alice and the other at Beaver Cove. The shingle mills, employ 2,500 men, have a daily capacity of 500,000 bundles.

With exquisite beauty and extensive variety of scenery, the most equable of climates, fine harbors, expanding railway facilities and valuable and varied natural resources, Vancouver Island has been given most of those gifts man can desire and the region forms a fine blending of the beautiful and romantic with the economical. Tourists are coming in ever increasing numbers each year to holiday in its natural playground. Sportsmen are attracted by the elk, deer, ducks, geese, snipe, wild pigeon, pheasants, quail, grouse, grilse, salmon, trout, and bass which abound there.

But Vancouver Island awaits a greater and more wonderful future when, in the course of time, more adequate exploitation will have been made of her rich agricultural lands and her other valuable natural resources.

Forest to Newspaper in one Week

One week a stately growing tree flourishing in the primal fastness of some Canadian forest; the next, a newspaper, quickly perused and carelessly thrown away by readers in United States cities. This is the brief inner history of a great industry and the record of Canadian enterprise and transportation.

The Chicago Tribune faced a sudden newsprint shortage which demanded immediate remedying if their readers were to receive their newspapers as usual. A serious situation for any newspaper. Canada was the source of its newsprint supply and an S.O.S. was sent to the Abitibi Company at Iroquois Falls in Northern Ontario.

The paper company passed the S.O.S. on to the Canadian Pacific Railway at North Bay and, as soon as they could be collected, forty cars were despatched over the Temiskiming and Northern Ontario Railway through two hundred miles of forest and plain to the mill. Their arrival was eagerly awaited and in record time the forty cars were loaded with a thousand tons of newsprint, a goodly cargo but merely two days output of the giant plant. Away to the border thundered seventy thousand dollars worth of embryo newspapers. This was at five p.m. Friday, March 10th.

A "Special" Rushed Shipment Through

A fresh engine was awaiting the special train when it reached the Canadian Pacific lines at North Bay and it continued on its way taking precedence over all but passenger trains and making, in fact, fast passenger time. Latterly it changed to the lines of the Michigan Central and arrived in Chicago on Sunday afternoon March 12th, having accomplished the trip of 1,059 miles in fifty hours. On Monday afternoon newsboys were carrying a part of the shipment about Chicago streets in the shape of newspapers. Readers in the great city received their papers just as usual, little realizing how close they had been to having the publication interrupted, and without a thought they were thrown away.

The wood which was pulped and latterly became the paper to constitute this expeditious shipment, had come to the mill but a few days previous to the urgent demand so that a spruce or pine standing in stately dignity in a Canadian forest this week, may before the next elapses, be in the wastepaper baskets of a dozen cities of the United States.

It has become a great industry in Canada, the manufacture of newsprint, accounting for a production of about 2,500 tons every day, of which the forests of Northern Ontario supply half. Taking a strip a yard wide, about the size of an opened newspaper, Canadian newsprint mills each day encircle the globe with their product.

Industrial Outlook in Western Canada

*By John Sweeting, Industrial Agent,
C.P.R., Winnipeg*

It is becoming apparent that the western situation is rapidly improving, with a continuance of up-grade in trading. While the immediate volume of increase is small, it is being added to month by month, bringing with it a more confident feeling, looking to a more remunerative summer and fall trade.

The writer has been spending some weeks recently touring the West, not so much with a view to line up any prospective development of magnitude, but to get the right focus on the existing state of affairs and the possibilities of building up better conditions. It may be said that in the cities and towns as well as in the country districts, the situation is slowly evolving to one of greater confidence—mental perhaps, to some extent—but nevertheless real in so far as there is a distinct effort to increase trading and a more insistent necessity on the part of the consumer to purchase. Efforts at postponement have been made, until now the time has arrived when money must be spent on necessary commodities. There is nothing depressing in the outlook, and it is somewhat remarkable to note the uniformly expressed opinion of western business men on prospective trade developments.

The Investment of Capital

The outlook for investment of capital in the development of resources and the construction of branch factory plants is not yet showing any activity, although many prospects are in sight, waiting possibly a more favourable opportunity to carry out extensions and open up new mining, lumber and other development. Recent oil discoveries south of the international line in Montana, have caused considerable activity in the Lethbridge and south area and undoubtedly some wells will be put down on the Alberta side of the line during the summer. It is early yet to express an opinion of the prospects, but the situation appears to justify the investment of some capital in this area. At the present time it is being thoroughly investigated with a view to determining prospective locations for drilling.

Conditions on Pacific Coast

While on the Pacific Coast the writer noted an improvement in general conditions with a somewhat extensive building program in sight.

The export lumber business is on the up grade and while the interior mills are not yet very active, some orders are coming along that will help the situation in the near future. Mining is distinctly better and should produce a remunerative season, with activities in new districts of considerable dimensions. In shipping circles, better and more trade is being looked for and

there appears to be a likelihood of good tonnage both for Pacific and Coast business. Coast factories are active, wholesale business fair, with collections not up to standard, but gradually bettering; the outlook therefore, can be sized up as reasonably good.

After all there is the impression abroad of better times and important factors in the business world, the banks, loan and mortgage companies are looking at the situation in this light, which undoubtedly has assisted in creating a more hopeful outlook. There is a feeling that such an attitude is justified and it is believed that results will show favourable conditions, now under expectation, duly proven during the next few months.

Queenston-Chippawa Development

Canada is a land of big things not only by reason of possessing within her confines certain natural resources in excess of other countries but also by feats of engineering and construction which equal anything yet achieved elsewhere. Now at Queenston, Ontario, she possesses a great hydro-electric plant, with an ultimate capacity of 600,000 horse-power, in the Queenston-Chippawa development. When, just previous to the new year, Premier Drury of Ontario turned a brass hand controller letting the water into one of the huge penstocks and setting in rhythmic motion the machinery, he performed the last act of three years achievement of some of the best brains in the electrical world, the industry of thousands of workers and an expenditure of eighty millions of dollars.

The Chippawa-Queenston Hydro Power—Canal development is the latest contribution to the electric power supply of Ontario by the Hydro Electric Power Commission of the province under Sir Adam Beck. It is part of the Niagara development system and with its ultimate capacity of 600,000 horse-power will be the largest electrical plant in the world. The project was first planned in 1910 and though a beginning was made in 1914 it was not until 1917 that actual construction was begun to meet a grave power shortage created by the war demand for munitions and other war material. At times more than eight thousand men were engaged upon the project which, it is estimated, will ultimately cost in the neighborhood of one hundred million dollars,

Canal from Chippawa to Queenston

The power canal runs from Chippawa to Queenston. The intake is from the Niagara river at Chippawa above the falls and for four and a half miles it follows the Welland river which has been widened. Through the river section the water is led to the Control Works at the upper end of the canal which stretches to the Power House at Queenston where water is

returned to the Lower Niagara river. The canal is $12\frac{3}{4}$ miles in length, but of this only about $8\frac{1}{2}$ miles is constructed canal.

There is an effective "fall" of 327 feet, and for every cubic foot of water that flows through the canal per second, thirty horse-power will be developed as compared with sixteen horse-power at Niagara Falls. The power house is 650 feet in length and 160 feet high. Large hydraulic turbines of 60,000 horse-power each, have been installed, and two of the five generators now to be installed are operating. They run at $187\frac{1}{2}$ revolutions per minute.

An achievement for Canadian Engineering

The completion of the Queenston-Chippawa development project is a signal achievement for Canadian engineering and a notable addition to those features of accomplishment which young Canada is steadily making. It is a further step to utilize the tremendous water-power resources of which the country is possessed, and which makes projects of such development possible. Great advantages are accruing to the province as a result of this development. The progress of the utilization of hydro-electric power in Ontario can be gauged from the fact that whilst in 1910 there were 10 urban municipalities using 750 horse-power there were, in 1921, 236 municipalities and 44 townships, with a total of 265,000 customers, using 305,247 horse-power.

On the basis of this amount of power being used ten hours daily for 300 days yearly, the annual saving to Canada in coal, which would require to be imported from the United States to develop 300,000 H.P., would be equivalent to at least 150,000 tons or \$750,000, if taken at a value of \$5.00 per ton.

Canada's Hydro Progress—1921

Hydro-electric development according to *The Canadian Engineer* was very active during the past year and as a result nearly 300,000 horse-power were installed, bringing the total in operation up to 2,775,980 horse-power. Of this amount Ontario accounted for 174,000 h.p., or a total installation of 1,212,650; Quebec 90,000, 1,015,385; Manitoba 14,000, 97,247; Nova Scotia 13,000, 46,948; New Brunswick 9,000, 30,180. In British Columbia, Alberta, Prince Edward Island, Yukon and North West Territories, while there was little power actually installed, several plants were in the course of construction or under consideration. The amount of turbine installation in horse-power in these provinces in 1921 was 305,315, 33,187, 1,869 and 13,199 respectively. An idea of the amount of hydro-electric power installed in Canada may be gleaned from the fact that at the end of 1920, according to the Dominion Water Power Branch, there was 194% more developed water-power per capita in Canada than in the United States.

A unique situation exists in Canada as regards the available water-power and coal resources. In Ontario, Quebec, Manitoba and the Yukon (including the North-West Territories), where there is insufficient coal, Nature has provided abundant water-powers, which are being rapidly developed by private and public institutions. British Columbia, Alberta, Nova Scotia, and to some extent New Brunswick, have large coal reserves, but the development of their water powers has not been neglected, and at the present time have a sufficient quantity of electrical energy developed for all needs. Saskatchewan, which has yet no large coal reserves or water powers, is in close proximity to the enormous coal deposits of Alberta, and the question of electric power has as yet presented no difficulties.

Development in Eastern Canada

In Eastern Canada the most outstanding hydro-development under construction in 1921 was undoubtedly that of the Ontario Hydro Commission's Queenston-Chippawa project, which will have an ultimate capacity of 600,000 h.p. when completed. While the project was not completed two 60,000 h.p. units have been installed. Other projects completed in Ontario last year, were the Twin Falls plant of the Abitibi Power and Paper Company, with a capacity of 24,000 h.p.; 5,200 h.p. development of the Spanish River Pulp and Paper Company at Smoky Falls on the Sturgeon River, and the 4,500 h.p. development of the Canada Cottons at Cornwall. Among the more important extensions to existing plants were the 7,200 h.p. at the plant of the Great Lakes Power Co., at Sault Ste. Marie and an addition of 250 h.p. to the Lincoln Paper Mills at Merriton.

Two new units of 10,800 h.p. each, bringing their total installation up to 151,200 h.p. were under construction last year at Cedars, Que., for the Cedar Rapids Manufacturing Company. At Shawinigan Falls, the Shawinigan Water and Power Company were preparing to install a new unit in their number two power station, of 42,000 h.p. The Dominion Textile Company completed the installation of 3,000 h.p. at Magog, while Price Brothers, Ltd., finished their hydro-electric development at Chute Aux Galets on the Shippaw River of 17,600 h.p.

Progress in the Maritimes

In the Maritime provinces development was brisk. A plant of 13,500 h.p. was under construction at Grand Falls by the Bathurst Lumber Company, 9,000 h.p. of which was completed during the year. The first provincial development, that at St. Margaret's Bay, near Halifax, with an ultimate capacity of 15,000 h.p. is now ready to deliver some 6,600 h.p. Investigations were also made for a development with an ultimate capacity of 30,000 h.p. at Sheet Harbor, to supply New Glasgow, Stellarton, Trenton, etc.

Development was not particularly active in Western Canada. In British Columbia, the British Columbia Electric Railway Company commenced the installation of a fourth unit of 13,200 h.p. at the Stave Falls plant. The City of Winnipeg municipal plant at Point du Bois on the Winnipeg River was increased during 1921 by two units totalling 13,800 h.p., and another unit of 6,900 h.p. is being installed. The Manitoba Hydro Commission extended its transmission system and additional lines were built to Morden, Carmen, Roland, Jordan, etc.

The foregoing is a brief synopsis of the more outstanding hydro-electric undertakings completed or under construction last year.

Additional water-power for the Porcupine mining area, various pulp and paper industrial enterprises and the possible electrification of the Temiskaming and Northern Ontario Railway, etc., all point to 1922 as a period of continued development in hydro-electric.

Farming Wild Game

A "discovery" has been made near Leduc, south of Edmonton in Alberta which adds still another phase to the myriad features of Canadian agriculture and in its present lack of competition suggests the way to the development of an expansive and profitable industry. This is no less than a successfully operated wild game farm, abounding in the feathered denizens of all parts of the world as well as those native to every section of the Dominion. The farmer is D. H. Bendick and he has built up an enterprise that is possibly unique in the Canadian West as well as having developed a most prosperous business on novel lines which is returning him a handsome revenue. Conditions for the breeding of wild game he states to be ideal in Alberta and he believes that from a commercial viewpoint the future of the pursuit in the West is almost limitless.

The farm very generally remains in the primitive state in which Nature created it, situated in Central Alberta's picturesque parkland with its open spaces and generous bluffs. A large enclosure with artificial lakes has been provided for the summer quarters of the waterfowl. No alteration or addition was required for other feathered inhabitants and with this exception the primal wildness is unchanged. Between fifty and sixty different breeds of the feathered tribes are bred on the farm including wild ducks, geese, turkeys, pheasants, grouse, prairie chickens, quail, pea fowl, guinea hens, and doves. The breeding stock on the farm at the present time numbers nearly three hundred and this spring and summer it is expected that two thousand birds will be hatched and reared.

An Accident Responsible for Venture

The inception of this novel and profitable industry was largely accidental. Mr. Bendick

was an ordinary Alberta farmer with, however, the instincts and tastes of the naturalist undeveloped. One day some years ago, whilst cultivating his fields, he came upon the nest of a wild duck and his sporting and naturalist promptings rebelling at the idea of destroying the eggs, he took them back to the house and placed them under a hen. The result was ten wild ducklings, all of which reached maturity without mishap and multiplied surprisingly the following year. Rather by way of expanding the interest of his hobby than with any idea of profit, he followed up this success by importing some of the cheaper species of pheasants and since that time the farm has just grown and developed of its own accord into a business proposition returning very satisfactory revenue.

Other birds were added at different times, a permit from the Government being secured in the case of Canadian game birds protected by law. The question of operation was not from the first a simple matter, there being numerous difficulties to surmount and much hard study to be undertaken and mastered before the knowledge necessary for the care of the many feathered varieties was absorbed. An inherent love of the pursuit conquered all obstacles and now he has no trouble in rearing to maturity in substantial numbers, the birds of any breed.

Contrary to what one might suppose the market for this stock is excellent and staple. Hunting clubs and large estates in both the Eastern and Western United States are continually in the market for wild game birds especially good breeding stock, and are ready to pay good prices. In the past fall though Mr. Bendick had a numerous stock to dispose of, he was unable to meet half the demand which came to him. Geese range in price from \$15 to \$110 and native wild ducks are worth from \$10 to \$30 per pair. Other birds bring anything up to \$150 per pair.

Much Wild Game Abounds

The province of Alberta, in fact the entire area comprising the Prairie Provinces, being so excellently supplied with wild game, naturally offers the best possible conditions for their farming under semi-domestic conditions. It is the experience too, that the wild birds arrive at a sturdier maturity and reproduce more rapidly in this life than under the hazards of their natural existence. Two flowing wells on the farm supply water for the artificial lakes which are in the enclosure where the water fowl are kept. Long grass and brush surrounding the lakes supply the best of locations for nesting. The young birds are fed such animal foods as boiled eggs until they are old enough to eat grain. Some of the birds gather the greater part of their own food during the summer.

It has been found that wild ducks and geese which ordinarily lay only from five to eight eggs per season, will lay a second setting if the

first is taken away, which may be hatched out by a barnyard fowl. The Canadian wild goose has been found on domestication to become as tame as the domesticated breeds and the experience with the Egyptian goose has been similar. Wild ducks on the contrary never entirely lose their wild instincts. Young pheasants can be raised as easily as chickens and this has been proved with a dozen different varieties. Wild turkeys, introduced from Kentucky, have done exceptionally well and completely out-classed in proportions the tame varieties. Some of these have attained a weight of over thirty pounds. The California quail, the Hungarian partridge, the Canadian prairie chicken, and Chinese pheasants have all been bred successfully proving extraordinarily hardy.

Across Canada—The Twin Ports

In national importance one cannot write of Port Arthur without the city of Fort William coming up for consideration and any broad treatment of the places they occupy in Canadian economic life must associate the two ports. Though two separately existing cities their boundaries are so contiguous as to make it only a matter of time before they will overlap; their interests are so common and their welfare and progress so inseparably bound together that issues affecting one inevitably react to the benefit or detriment of the other; though divided in civic rivalry they are united in forming together the connecting link between Eastern and Western Canada, the bulk-breaking point for much incoming and outgoing freight of Western Canada.

Fort William and Port Arthur were first developed as the most expeditious landing places for the early voyageurs who, by way of the Kaministiquia river and the Lake of the Woods, penetrated the fur-bearing areas of the Great North-West. With the remarkable development of the Prairie Provinces and the increasing volume of grain they have for export each year, they have developed into great ports as constituting the Great Lakes outlet for the great transcontinental railways, bearing their freights of grain and other produce on by more expeditious and economic routes to Montreal and the Atlantic.

Modern Ports and Terminals

Here, nearly a thousand miles from the nearest salt water, are to be found modern ports with huge terminals, excellent freight handling facilities and docks at which come and go vessels equal in size to Atlantic liners. Here are to be found the greatest grain storage accommodations in the Dominion with thirty-two grain elevators capable of holding 55,000,000 bushels, including, at Port Arthur, the largest grain elevator in the world with a capacity of 9,500,000 bushels. The volume of wheat, oats, barley and flax handled

at the twin ports in a single year aggregates nearly 400,000,000 bushels.

One of Canada's two grain sample markets is located at the Canadian head of the Great Lakes. This market is destined to steadily increase its prestige and volume of trade, especially after the advent of more elevators and flour mills, both of which are assured. The location is an admirable one for milling there being cheap power, a vast amount of grain always in storage, and unsurpassed transportation facilities to Canadian, eastern and central United States and the European markets.

Apart from their importance as lake ports, the twin cities are exhibiting a steady industrial growth which has been especially marked in recent years. In Fort William industrial capital invested increased from seven and a half million dollars in 1917 to nearly nineteen millions in 1919. Its annual production in the latter year was \$15,500,000. In Port Arthur industrial capital in the same period increased from eight and a half millions to eleven millions and its 1919 output of manufactures was in excess of seven and a half million dollars. Among the industries flour milling, car and foundry, stoves, bricks, starch and syrup, steel and wooden ships are important. Fort William is the greatest coal handling centre in Canada and Port Arthur has one of the largest ship-building plants in the Dominion.

Steadily growing in Industrial Importance

Hemmed in by areas containing many rich natural resources in considerable volume, as well as possessing facilities of other kinds, the two cities face an assured future of industrial importance. In the territory directly tributary are found gold, silver, copper, iron, molybdenite, and pyrites, which in the main are undeveloped. They are in the centre of a large pulpwood area and Thunder Bay affords a safe and in all ways an admirable site for pulp and paper mills. Port Arthur has water falls in its vicinity capable of developing 300,000 horse-power of electrical energy 50,000 horse-power of which have already been developed with an additional 72,000 h.p. under development. Fort William has 45,000 h.p. developed with 100,000 h.p. yet available.

The cities of Port Arthur and Fort William are modern and progressive in every respect and furnish every convenience and facility to businessman, ordinary resident and tourist. The territory about them is growing in popularity each year and is destined to become a great touring and camping ground, and is already interspersed with fine auto roads. In more than one respect are the Twin Ports a gateway, letting the produce of the great west into the east and the tourist into the land of mountains, hills, forests, lakes and streams.

Labour in Canada

Prepared by the Dominion Department of Labour as part of the pamphlet "Canada as a Field for British Industries" issued by the Commercial Intelligence Service of the Department of Trade and Commerce.

To appreciate fully the status and condition of labour in Canada, one must consider the extraordinary influences which bear directly upon it, and which find no exact parallel elsewhere. A new country, as yet scarcely developed, covering the prodigious area of 3,729,000 square miles, populated by approximately 9,000,000 people, and subject to a wide variation of temperature and climatic conditions, cannot fail to evolve problems peculiarly its own in respect of industrial labour and the economic problems deriving therefrom. The basic factors directly affecting the labour problem are: the geographical aspect of Canada, its climate, the proximity of an older and far more developed nationality to the south, and the constant flow of European immigration.

Geographically, the Dominion is divided into well-marked eastern and western areas, at approximately the Ontario-Manitoba border. More specifically, however, the four great divisions must be considered. The first is the Atlantic area, comprising the Maritime Provinces and lower Quebec; the second, the great inland industrial area extending from Quebec City to the border and thence to the head of Lake Erie; the third, the prairie country, or wheat belt of Western Canada, from Winnipeg to the foothills of the Rockies; and the fourth, the Pacific Slope.

With the exception of a strip of rugged and uncultivated country running north from Lake Superior, and of course the Rocky mountains, all these districts impinge upon each other and there is no break in the continuity of industrial or agricultural life. It is necessary to appreciate these zones and the distinctive economic and industrial entity of each to fully realize the tremendous influence of the geographic factor on Canadian labour.

The Atlantic area (that is to say the Maritime Provinces and lower Quebec) is not very densely populated and is largely agricultural. Little industry other than coast fishing, canning, lumbering, and (in Nova Scotia), steel and coal exists except in a limited way in certain of the more important cities. The labour supply is conservative, low priced by comparison with the inland areas, and ample for existing requirements.

The Main Industrial Area

The main industrial area of Canada is south-western Quebec and southern Ontario. Eastern Quebec is almost wholly agricultural and the northern districts are chiefly concerned with lumbering. Quebec is populated largely by descendants of the early settlers of New France. They form a race within a race, differing in language and religion from the rest of Canada. In consequence, bilingualism obtains throughout the province, both in regard to education and legislation. In temperament the French-Canadian is thrifty and little inclined to engage in strikes. For these reasons, and also because of the conservative and powerful influence of the Roman Catholic church, labour in Quebec is perhaps more stable and certainly cheaper than elsewhere in Canada.

The other half of the main industrial area, southern Ontario, is the most Americanized section of the whole Dominion, by reason of the establishment of many United States branch factories or subsidiaries, and the use of a waterway common to both countries. Here labour is abundant, more effected by United States influence, and generally rather higher in cost than in Quebec.

The Prairie Provinces of Manitoba, Saskatchewan and Alberta are almost wholly agricultural, and to a large extent populated by immigrant labourers and farmers. The development of water-power near Winnipeg and Calgary, however, is likely to result in increased industry.

The Pacific Slope

The Pacific Slope, centring on the cities of Vancouver and Victoria, is industrially of great and growing impor-

tance because of the immense power sources and the proximity of the Oriental and Australasian markets. In British Columbia a supply of cheap Hindoo and Japanese labour was at one time important, but is becoming less so because of more stringent immigration regulations. White labour, however, is more highly paid in British Columbia than elsewhere in Canada, chiefly because of higher living costs.

It is evident from a glance at the map that the primary development of Canada is inevitably along its southern border, because of (a) the difficulty of access to, and the climatic conditions of the northern districts; (b) the remarkable system of waterways from the Great Lakes to the Atlantic; and (c) the attraction of United States industries and markets. Virtually, Canadian activity is pressed against the United States border, and to this fact is due that country's great influence upon the labour situation. One in race, language and ideals, it is inevitable that that older civilization should exert a marked effect both industrially and, as respects labour, economically, upon the younger. No more striking proof is to be found of this fact than in Canadian trade unionism, upon which the influence of the older organizations is very great.

Immigration

A factor of obvious importance in the Canadian labour market is immigration. It is not necessary to cite here immigration figures or statistics; it is sufficient to say that in normal times immigration more than met the demands of growing industry.

The original impetus was given to immigration a few years after Confederation, when the Canadian Pacific Railway built the first railway line across the continent. From that date immigration steadily increased until the war period, when, of course, it was reduced to its lowest point. Were the figures available it would probably be found that a very great percentage of both Canadian and United States immigration is sympathetic in character; in many cases prepaid tickets are forwarded to their families and relations by the original settlers who have found their opportunities in this new world.

The Canadian Government and the Canadian Pacific Railway directly encouraged two classes of immigrants, the agricultural labourer and the domestic. However, an examination of statistics from 1904 to 1920 shows that industrial workers, that is to say, labourers, mechanics, artisans and machinists, constituted about forty per cent of the total male immigration.

The Alien Labour Act, a retaliatory measure directed against countries having similar legislation against Canada, prohibits the importation of contract labour, with certain exceptions as to family, specialized trades and so on. This Act does not, of course, operate against the United Kingdom.

In the Prairie Provinces large numbers of families of prosperous farmers have been established for many years, and the population of the country is being continually added to by immigration. While as yet activities of these provinces are chiefly agricultural, the development of the industries is dealt conservatively with the demand created by increased settlement.

Many parts of these provinces are rich in natural deposits of industrial raw materials. Without doubt in the future there will be a gradual tendency for the centres of industrial activity to move west with the development of these resources.

Every one a Mac

Newcomers of the spring included a party of thirteen stalwarts from the Hebrides which arrived in Canada on the Canadian Pacific liner "Tunisian." On the arrival of the vessel at St John a reporter seeing a friend aboard called up "Hullo Mac," and every one of the party looked down over the rail. They were all Macs

—three McLeans, three McDonalds, two McKenzies, two McTavishes, a McPherson, a McIntyre, and a McIntosh. To accentuate the Scotch flavor the priest who brought the party out from Scotland was Father McDonnell and they were all met on arrival and escorted to the dock by the Canadian Pacific's colonization agent Andrew McDuff. Ensued a meeting of the clans with the air foggy with Gaelic.

They were a handsome lot, all single men under thirty, strong and healthy and hand-picked for their qualities, all bent on tearing up more Canadian soil. They created considerable attention in the vicinity of Windsor Station on their arrival in Montreal for all are near the six foot mark and some over it and their chests and shoulders are built in proportion. Every one is a veteran of the Imperial Army and several wear decorations won in the late war. Best of all they are only the forerunners of one hundred and fifty Scottish crofters coming to Canada this summer to transfer their farming activities to Canadian soil. And every one is a Mac.

First Immigration Party

The party is the first to be brought out to Canada this summer from Northern Scotland by Father McDonnell who is the instigator of the movement and is acting as special colonization agent in that territory for the Canadian Pacific Railway. Father McDonnell is himself a war veteran having been the chaplain to the Canadian Twelfth Brigade with whom he won the Military Cross. With the help and sympathy of Bishop Fallon he has established a large farm at Chatham, Ontario, which acts as a clearing centre for the young immigrants from which they are placed on farms. All the young huskies of this party will go to places waiting for them on Western Ontario farms.

Father McDonnell is doing a splendid and valuable work in organizing and conducting these parties to the Dominion for they are all crofters experienced in agriculture in the arduous conditions of Northern Scotland, forming the ideal type of settlers for Canadian agricultural lands. It is expected that the movement will result in the transfer of some hundreds of these hale farmers and their families from their small holdings to expansive Canadian farms. So far all the new arrivals have been men, and young men, but as one of them said naively in Montreal, "We're no' married yet but later on we'll write for the lassies to come and join us."

A Western University

The wide scope of the work which Western Canadian universities have undertaken in recognition of the place they fill in Canadian national life and the field of provincial endeavor is admirably illustrated in a survey of the annual report of the University of Alberta at Edmonton. The provinces of Alberta and Saskatchewan were created only in 1905 and their universities came into existence years afterwards, but already these have won for themselves

enviable names as seats of learning, have become centres of progressive thought, and stand for all that is best educationally in the province.

The University of Alberta was established in September 1908 with a group of four professors, thirty-seven students, and one faculty, and occupied four small rooms in a city school. Since its inception it has occupied a special place in the economic and intellectual life of the province and has developed into the fifth university of the Dominion with respect to numbers with five recognized faculties, more than eleven hundred students and a regular staff of nearly one hundred professors and instructors. The success of the University of Alberta is cited here merely because it is a concrete example of what is being accomplished by the universities of the Western Provinces, and to illustrate what an unique position they have come to occupy in the general and everyday life of the provinces they serve.

No more striking exemplification of the polygenous composition of Western Canada's population could be given than might be gleaned from an analysis of the attending students of the university in 1921. Incidentally, this tends to prove the success of the assimilating influences at work among the foreign born population and that the early teaching received leads a section at least to the desire for higher education.

Of the total students in attendance 813 were of British origin, of whom 634 were born in Canada, and only 137 within the province of Alberta. Every province of the Dominion was represented by students. There were 148 students who gave their place of birth as the United States, in all twenty-seven states being represented. Other students came from Russia, France, Austria, Ukraine, East Galicia, Denmark, Norway, Sweden, Germany, Iceland and Switzerland.

Research Department and Special Courses

The registration of students by faculties was as follows:—Arts and science 593; applied science 67; law 75; medicine and dentistry 181; agriculture 47, and special courses 143, making a total of 1106. In developing the organization of the university, the aim has been to relate the work as closely as possible to the needs of the province so that the following of the curriculum in respect of the regularly enrolled student body, has comprised merely a section of the work and as circumstances have arisen demanding the assistance of the highest provincial educational authorities, they have been met by the various faculties. During the year 1921, for instance, short courses were given to soldier farmers in agriculture, to farmers' wives in household economics, to public health nurse candidates in nursing and child-welfare and to others in dairying, pharmacy, dentistry, correspondence etc. Wherever, in the rapid development of the West, a problem crops up which only the study of years can grapple with, the provincial university is there to solve it.

Agriculture Receiving Close Attention

This work of provincial development has taken the university far afield and beyond the scope of endeavor of universities situated in calmer surroundings, which have not the ceaseless activity of new development all about them, and have no work of pioneering or moulding to perform but follow a road paved by tradition.

In an agricultural province where the foundation of a sound basis of technical knowledge is coming to be more and more appreciated, the study of agriculture naturally secures considerable attention and much is being effected for the development of the industry along the soundest and most scientific lines. The agricultural faculty, especially on its investigational side, ranks the first in Canada. Last year the department of field husbandry alone had more than one hundred problems in the process of solution. The success of the animal husbandry department in its feeding experiments, has attracted very wide attention.

The geological department is playing a prominent part in the development of Alberta's mineral deposits and its investigations and researches both at the university and

through parties sent out, have proven of the highest value in supplementing what the Dominion government is doing.

The public health laboratories are claimed to be as fine as any on the continent and as efficient, and are extensively used by the medical profession of the entire province. The rapid development of research initiated by members of the scientific association promises well for the future. A separate Research Department operated in co-operation with the Provincial Government is definitely at work on special problems.

An Elaborate Extension Program

One of the most valuable works of the establishment is the carrying out of an elaborate extension program of many ramifications which carries the benefits of the university into the nethermost corners of the province. Alberta is largely a province of rural districts which, whilst having the soundest of elementary educational facilities, are somewhat limited in opportunities for the higher progression. This is admirably carried out though the extension department of the university which circulates libraries, has its debating organizations, its lantern slide and film services and other means of blending instruction with entertainment for the benefit of those unable to attend the university courses. It is estimated that in 1921, 150,000 people received direct benefit through the workings of the extension department of Alberta university.

It is difficult to estimate the just value of the provincial universities to the newer western provinces or the pronounced effect they have had on the intellectual and aesthetic growth of the area by initiating their activities when the process of nation-building was still in the evolving and moulding stages. Whilst every possible resource for material progress has been ready to hand for the matter of a little delving, the means of the higher cultivation, which must progress with the commercial and industrial to develop a really great people, has had to be created, and this has been adequately effected through the provincial universities.

Canada's Indians Progress

Popular fiction has pictured the Indian of to-day as a person reluctant to acquire the ways of civilization, living more or less in poor conditions, hunting in the summer and existing on government bounty during the winter. This is an entirely erroneous impression and the report of the Department of Indian Affairs for the year ended March 31st, 1921, not only depicts the Canadian Indian as sound, both physically and financially, but of a superior mental type to that common during the middle of last century. The majority of them are farmers with ample, well-cultivated holdings although many still follow the trail. Their wealth in real and personal property is estimated by the Government at \$68,502,140 in 1921, as compared with \$67,915,077 in 1920, and \$67,262,415 in 1919, or an average per capita of \$682.06.

The latest statistics give the Indian population of Canada at about one hundred thousand. The government report says "that among the less civilized groups, the high birth rate balances the high death rate, but, in the civilized tribes, who have met and withstood the first shock of contact with civilization, there is an appreciable gain, not only in numbers, but in physical standards." Ontario is the home of 26,411 Indians; British Columbia 25,694; Quebec 13,366; Saskatchewan 10,646; Alberta 8,837;

Manitoba 11,583; Nova Scotia 2,031; New Brunswick 1,846; and Prince Edward Island 292. This does not include 5,292 Indians in the Yukon and North-west Territories.

Value of Farm Products

Farming was the principal source of income during the year under review. The total value of farm and livestock products was \$3,945,174, which was distributed as follows: Alberta \$566,730; British Columbia \$927,889; Manitoba \$230,053; New Brunswick \$10,160; Nova Scotia \$27,460; Ontario \$939,709; Prince Edward Island \$3,500; Quebec \$355,595; and Saskatchewan \$884,078. The area of land actually under cultivation was 221,800 acres, an increase of 3,800 acres over the preceding year. Despite unfavorable climatic conditions, 1,488,000 bushels of grain were harvested, as well as 610,900 bushels of roots and 151,026 tons of hay.

In addition to their agricultural income, they received the sum of \$2,726,773 for labor; \$284,863 from land rentals and timber; \$1,046,760 for fishing; \$860,494 hunting and trapping; \$702,575 annuities paid and interest on Indian Trust Fund; and \$1,103,910 earned from other industries and occupations. This brings the total income up to \$10,670,549, which based on population means an income of approximately \$105.95 per capita.

Lumbering operations on the Indian reserves were carried on very extensively during the year, approximately fifty-eight million board feet being cut. In addition to timber cut for sale, the Indians themselves cut approximately ten million b.f.m. of timber for building and fencing purposes and 20,000 cords of fuel for domestic use, besides an unreported quantity of material for the native manufacture of snowshoes, axe-handles, hockey sticks and baskets. Forest conservation work carried out during the year involved the disposal of slash, elimination of fire hazards, closer utilization of timber and the salvage of diseased, infected or fire-killed timber. In all cases Indians were employed as fire rangers or timber guardians on the reserves.

Industrial and Boarding Schools

Large sums of money have been expended by the government in erecting commodious, up-to-date Indian schools, and in securing the best academic and technical instructors. During 1921, 326 schools of all classes were in operation, of which number 253 were classified as day schools, 58 boarding and 15 industrial. There was an enrolment of 7,775 in the day schools, 3,156 in the boarding schools and 1,627 in the industrial schools, making a total for the year of 12,558 pupils. To maintain these schools, the Government expended the sum of \$1,112,409 about half of which was for boarding schools. It is interesting to note that in addition to the above sum, the various tribes contributed another \$47,296.

The Indians also did their share in the war, and their usefulness as "snippers" and "runners" to the Canadian forces was invaluable. At the termination of the war many took advantage of the soldier settlement scheme to purchase farms. One hundred and eighty loans have been granted for this purpose and there are a considerable number under consideration. The total outlay to-date is \$321,269, of which sum \$18,496 has been repayed. It is not expected that the total loans under this scheme will exceed \$1,000,000.

The Growth of Manitoba

The province of Manitoba occupies a peculiar status in the Dominion of Canada. Generally included in that vast territory known broadly as "the West" it was the first settled area of that territory, the agricultural settlement of Lord Selkirk taking place in 1821, and in history and tradition it goes farther back than those provinces between it and the Pacific Coast. As originally created into a province, it comprised an area of only 13,500 square miles. This has been increased by adding territory to the north until it now occupies 253,720 square miles, and is in size of about the same extent as Saskatchewan and Alberta.

Its wonderful wheat product first brought it fame, making the name of Manitoba Hard known wherever milling wheat is in demand. This rapidly spread to other agricultural products and of recent years the province has made strides in mining, industry and other activities which have attracted widespread attention and promise her a future more brilliant than even the most sanguine previously held out for her.

According to the last census report, the province of Manitoba increased in population from 455,614 in 1911 to 613,008 in 1921, a growth for the decade equivalent to 34½ per cent. The trend of progress in any area may generally be seen in the manner people flock to it and this one concrete instance of growth may be taken as indicative of the monster strides Manitoba has been taking in every phase of her provincial activity. No proper estimate can be placed on her natural wealth for though those known are extensive and diversified they are continually being added to by fresh discoveries and developments.

First Development Agricultural

The first permanent development of Manitoba was agricultural and farming has maintained its precedence over all other industries in spite of their sudden rise and rapid growth. The agricultural settlement being largely accomplished previous to the opening of the last decade, it could hardly be expected to exhibit more than the ordinary normal development of a settled area.

Yet a substantial increase in acreage and production has taken place in this period. Wheat in 1910 occupied 2,760,371 acres and produced 34,125,949 bushels; in 1921 39,053,980 bushels were produced from 2,226,376 acres. There were 416,016 acres devoted to barley in 1910 producing a crop of 6,506,634 bushels; last year, 19,681,645 bushels were produced from 1,043,144 acres. In the same period the acreage devoted to flax increased from 34,684 to 61,689 and the production from 176,675 to 544,675 bushels. The 1910 crop of potatoes was 2,865,839 bushels; in 1921 it was 5,858,212 bushels.

Manitoba is a prairie province there being but few timbered areas and the few hill districts which contain quantities of standing timber have been set aside as Dominion forest reserves. Whilst there is very little utilization of this timber as a commercial enterprise, timber tracts are of great value locally to settlers who find multifarious uses for the product of the reserves. There is however a small commercial business which in 1912 produced 39,535,000 F.B.M. of lumber worth \$545,356; 100,000 shingles worth \$200; and 1,418,000 lath valued at

\$2,360. In 1919 the corresponding production was 54,246,-000 feet of lumber worth \$962,416; 60,000 shingles worth \$120 and 3,235,000 lath worth \$9,707.

Extensive Inland Water

Manitoba contains an area of 19,894 square miles in inland lakes, three being of gigantic size, Lake Winnipeg, 9,457 square miles, Lake Winnipegosis 2,086 square miles and Lake Manitoba 9,457 square miles. All of these abound in edible fish including the whitefish, pickerel, trout, pike, tullibee, perch, and sturgeon. Both winter and summer fishing is carried on and though it is only within the past couple of years that any attempt has been made to engage in this pursuit on a commercial basis, a most gratifying success has been met with and Manitoba fish are now to be encountered in all the large centres of the American continent.

In 1909 the value of the fish caught in the province was \$600,396; by 1913 this had risen to \$1,103,385; and in 1920 the annual catch aggregated a value of \$1,249,607. Merely the minutest of beginning has been made on the commercialization of Manitoba's inland waters which is capable of developing into an industry of large proportions.

The centre of greatest attraction in Manitoba at the present time, is the mineral belt of her northern area where preliminary prospecting and developing have disclosed illimitable possibilities in a variety of mineral resources. Work in this field is of too recent origin (merely initial development), to have yet shown appreciable results and it is only in the years to come that the exploitation of this area will effect a revolution in the mineral statistics of the province.

A very healthy progress in the mineral industry has however been exhibited in the past twenty years and whereas the production in 1900 was worth \$216,830, it was valued at \$2,928,316 in 1910, and at \$3,900,207 in 1920.

Progress in agriculture always has its reflection in an expansion in manufacturing industry and this is shown in a marked degree in the case of Manitoba where industrial development in the past twenty years has been most startling. Increasing industrial establishment has taken place to meet the needs of greater settlement whilst Manitoba has gone a great way towards supplying the needs of the prairies to the west of her. The remarkable growth of the two decades just passed can be most clearly realized from a comparison.

	1905	1910	1919
ESTABLISHMENTS.	354	439	1,622
CAPITAL.	\$27,517,297	\$47,941,540	\$111,535,665
EMPLOYEES.	10,333	17,325	27,353
WAGES.	5,909,791	10,912,866	30,988,152
PRODUCTION.	28,155,732	53,673,609	153,003,614

Another provincial resource which takes a lower though important place in provincial revenue is fur. The northern tracts of the prairie province each year yield to trappers many valuable pelts of a high grade and value. In the season 1920-21 these amounted to 499,313 skins which had a value of \$1,046,000.

An increasing interest is also being taken in the domestication of live fur-bearers and it has been estimated that beaver farming in the province can alone be promoted to a source of revenue yielding \$500,000 annually. The province now has its own fur sales held periodically at Winnipeg at each of which peltry to the value of approximately half a million dollars changes hands.

Manitoba contains a great diversity of natural resources the development of many of which is merely in the preliminary stages. When it is considered that agricultural settlement, industrial establishment and exploitation of all kinds have at present only been accomplished over a relatively small portion of the province, it must readily be conceded that a great future awaits it when men and capital in greater number and volume can bring about more adequate and justified development.

The Personally Conducted Party

Recently there arrived on board the Canadian Pacific liner "Montcalm" a group of fifteen families, aggregating one hundred and seven persons, selected from various parts of the British Isles, personally conducted by a representative of the London staff of the Department of Colonization and Development, and constituting the largest party of land seekers the Canadian Pacific has yet brought out. The average wealth per family in the party was in excess of \$10,000 and all this was to be invested in farming enterprises in Western Canada for various points in which the members of the group were bound.

The arrival of this party, and the knowledge that it was merely the precursor from the British Isles this summer of other C.P.R. parties to be conducted periodically, form striking tribute to the persistency of faith in the Dominion existing in the British Isles in the face of what during the past two years has amounted to virtual discouragement. The dimensions of this first party is also indicative of the success which has attended the efforts in making up land parties in the British Isles, in which work the Canadian Pacific has been the pioneer.

The advantage and benefits of the personally conducted party will be self evident. Emigration is a serious matter, a movement of a lifetime, a decision to be arrived at only after long deliberation and much weighing of the pros and cons. The contemplating settler is at all times in need of advice, encouragement and stimulation. Through the Canadian Pacific's conducted party the land seekers are gathered together in a central point and from their departure from their old homes until they are settled in their new ones, they are under the personal guidance and supervision of an experienced conductor. Advice and information are at their disposal, and through expert travelling knowledge, the petty inconveniences and trials of journeying are obviated. Emigrants travelling in this guise arrive in Canada under the best auspices, in the most comfortable circumstances and receiving the best impressions.

The personally conducted party has proved a complete success in stocking the Dominion with the best of citizen-building material from the British Isles. Immigrants are selected with due regard to the Dominion's immediate and most urgent needs and located in areas in which they will give the best account of themselves and where the Dominion most wants them. In 1921, which was a most discouraging year from the standpoint of immigration, and one in which the introduction of new peoples was effected only in the face of great difficulties and the overcoming of numerous obstacles, five such conducted parties from the British Isles gave Canada two hundred and twenty-eight new families of altogether four hundred and sixty souls and added to the wealth of the country by

more than \$600,000. These are now producing farmers in the western prairies, and through the efforts of the present summer more fine British stock will come to join them, to swell Canada's population and the tremendous volume of grain of the western harvest fields.

Utilizing Canada's Peat

Canada's fuel problem is one of the most stressful in the Dominion's national existence and was the first to receive attention from the Council for Scientific and Industrial Research upon its formation. Practically all the coal used in Central Canada comes from the United States and enormous sums of money are paid each year to that country for the winter's supply. What would be the effect upon the Canadian people and their industries should this supply be cut off, even for a single winter, is not pleasant contemplation, and naturally the question of meeting, wholly or partially, from Canadian sources, this demand for coal, in the central areas of Canada, has occupied the best minds of the country. Investigation has followed a double course—the utilization of the peat bogs of Canada and the briquetting of the low grade lignites of south eastern Saskatchewan.

In the vast central portions of Canada lying between the largest coal-bearing areas is an extensive territory where coal measures diminish and which is largely dependant upon the United States for its coal supply. There are estimated to be some 37,000 square miles of peat bogs in the Dominion from five to ten feet deep, the greater supply being in these coalless regions. In many of these areas it was considered that the peat industry might advantageously be introduced, the peat being peculiarly suited for manufacture into fuel for domestic and power purposes and conveniently situated as regards transportation facilities and contiguous adjacent industrial communities.

Formation of a Peat Committee

The manufacture of peat in certain areas had been carried out in a spasmodic and desultory manner for a number of years and in the main had not proved satisfactory. An investigation by the Dominion Mines Branch determined that this was due to lack of knowledge on the part of operators of the nature of the commodity they were handling. In 1918 the whole question was placed in the hands of a Peat Committee, consisting of four members, who conducted investigations into the peat bogs of the Dominion with a view to establishing their utility as a source of fuel. Both on account of the greater need of the industrial area about it, and to the favorable nature of the deposits, and the additional fact that the Ontario government had preliminary investigations already under way in that area, attention became concentrated on the peat bogs of Alfred, in Prescott County, Ontario.

A good deal of work with some elementary machinery had been already done on these bogs when the Peat Committee of the government turned their attention to them. Shipping of peat was on the verge of inauguration in 1914 when the outbreak of the war disorganized markets and traffic and set back development. When the Peat Committee took over, the process of air drying was immediately adopted as the most efficient and practicable and the problem confronting them resolved itself into a purely mechanical one which they directed their efforts towards solving.

A New Machine Designed

The fact that they had this problem to solve and that all their efforts were directed along the line of experimentation and investigation must be borne in mind. The fact that fuel could be manufactured from these peat bogs had already been established; their problem was to devise a system of manufacture which would permit the finished

product to compete with the imported hard coal. Working with the old plant in 1919, about 3,000 tons of peat fuel were produced and found a ready market.

During 1919 a new machine was designed upon the basis of the one in operation and the two operated in competition throughout 1920, accounting for a combined production in that year of 5,500 tons.

There was a remarkable demand for the product, inquiries coming from New Brunswick and Quebec points. The bulk of the output was consumed by Ottawa, Chatham and Pevea in Ontario, smaller supplies going to Kitchener, Ontario and Joliette and Three Rivers, Quebec. A close study was made throughout the year of the two machines in operation and the conclusion arrived at that neither was the most efficient possible, and accordingly a new machine was designed combining the best points of each of the other two.

The year 1921 was occupied largely with the construction of the combination plant so that this year was to a great extent one of continued experimentation and a development along other lines than production. In order to keep up a certain proportion of the output, one of the condemned plants was continued in operation and in 1921 a total of 3,889 tons were produced. Of this 1,500 tons were shipped to the markets which had already been developed and which the previous year could have absorbed ten times the production. An unfortunate fire of unknown origin consumed practically the entire remainder of the output and put an end to shipping for that year.

A Plant Finally Perfected

The year was a momentous one however, in demonstrating the commercial value of the plant which had been constructed to combine the best qualities of the two previously operated and coming up to the most sanguine expectations of the engineers who designed it. This year, with the exception of a few minor details, which are expected to occupy a short time in the beginning of the period of operation, the plant is perfected and is expected to operate the full season doubling at the very least, the production of the year 1921. The machine has a capacity of ten tons per hour and is expected to maintain an output of one hundred tons per day of ten hours. Last season the manufactured fuel was put on the cars at Alfred at a price of \$5 per ton and it is assured that this cost of production can be maintained whilst there is a possibility of shaving it this year.

Another excellent feature of achievement in the year 1921 has been the development of a small machine which can be operated by three men and will average a production of about two tons per hour. The machine, which has been perfected in operation, has been devised for use on small bogs, to be used by communities of farmers on such areas, or even to finish up the work on larger deposits. It is pointed out that whilst Ireland is the principal peat producing country of the world none of her deposits are extensive and that her annual production which runs into the millions of tons, is the result of work of numerous small areas.

The Outlook for 1922

The year 1922 will be the first actual peat producing year with machinery which is considered eminently satisfactory for commercial production and thus the real work of the Peat Committee has been completed. The efforts of the past few years have all been experimental and demonstrative, directed towards the developing of a commercially producing machine. The present machine it is considered, produces as economically as is possible and the matter of competition with coal at points distant from the bogs, is largely a matter of extraneous factors.

There would appear to be little doubt but that as a result of the activities and demonstrations of the Peat Committee, a peat industry will shortly be established in Canada and the coal importation situation alleviated by this means to at least some small extent. Results from the burning of the Alfred peat fuel have been excellent,

especially in combination with imported hard coal. It is not intended to obviate, by this means, or even expected, the necessity of coal importation but to curtail foreign buying, spend the money which would otherwise go out of the country, on the development of a Canadian resource and develop a source of fuel supply should, for any reason, the supply of hard coal be suddenly cut off.

Prince Edward Island Fisheries

In common with other industries, the fisheries of Prince Edward Island suffered during 1921 by the general trade depression and the United States "emergency tariff." While the quantity of fish caught last year was well up to the average the market was in an unstable condition and in consequence prices obtained were considerably less than those prevailing during the preceding year. Altogether \$862,826 were obtained for the catch which is a considerable reduction from the 1920 figures of \$1,730,285.

Lobsters were the most important fish caught by the Island fishing fleet, and were valued at \$649,299. Of this amount canned lobsters accounted for \$629,600; tomally lobsters \$1,075, and lobsters sold in the shell \$18,624. It was the custom of the fishermen to take the biggest share of their catches of lobsters direct to Boston, but the advent of the United States "emergency tariff" has effected this market to some extent. Smelts and trout came next in value, and of these \$68,081 worth were caught. Herring and mackerel were valued at \$59,506; haddock and hake \$54,940; oysters \$25,669; caplin and eels \$4,837; and tommy cod and clams \$494.

Capital Invested

The total capital invested in the fishing industry of Prince Edward Island last year amounted to \$757,912. Of this sum by far the largest portion was expended on lobster traps, which accounted for \$239,555. Lobster canneries and equipment were second in value, being worth \$183,795, closely followed by vessels and boats, \$176,098. Piers and wharves represented an investment of \$68,000; nets \$55,734; small fish, smoke and ice houses \$23,350; trawls and hand lines \$11,300.

Prince Edward Island is universally known as the home of the Black Fox industry, while as an agricultural producer, she ranks high with her sister provinces, but the extent to which she is dependent upon her fisheries is slightly comprehended. Of a population totalling 88,615, 2,903 persons, both men and women, or approximately one in every twenty-nine of population, are employed either in the canneries, unloading vessels, or as fisherman. In nearly all cases each of these employees has one or more persons dependent upon them, and the success or failure of the fishing catch naturally has a very marked effect on the business conditions of the Island.

Canada's Herring Fishery

The herring is one of the world's most important food fishes an estimate of the world's yearly herring catch by the Department of Fisheries, placing it at three billion fish or half that number of pounds. The finest species are found, and most prolifically, in North American seas, particularly the colder waters of the North Atlantic, and scattered throughout these at one and the same time, are scores of shoals any one of which would go a long way towards supplying the whole of man's present day consumption of herring. When one considers their high food value and palatability, and the fact that they are obtainable in abundance all the year round, it is striking that exceedingly small amounts of herring are used fresh on the continent. There is room here for an educative campaign to be followed by vigorous business action. For the reason that it has not yet attained the popularity it deserves in this country, adequate toll has never been taken of the herring fishery.

On the American side of the Atlantic where the herring catch has not assumed the importance it has long held in Europe, the fishery is entirely a shore fishery. The species obtains in as great abundance off the American shores as in the North Sea, but Canadian fishermen have never found conditions sufficiently inducing to invest in special equipment to fish offshore.

The herring is nevertheless an important fish in Canada and in the fisheries' revenue each year accounts for a substantial amount following only the salmon and cod. The catch in 1918 amounted to 1,764,223 cwts. valued at \$2,295,611; in 1919 it was 1,506,961 worth \$1,624,730; and in 1920, 2,146,986 cwts. valued at \$2,012,638. In the twelve months of 1921 841,575 cwts. were taken which sold for \$632,941.

Atlantic and Pacific Fishing Grounds

The Canadian herring fishery is prosecuted off both Atlantic and Pacific coasts the methods used being by means of brush-weirs, gillnets and torching. The herring fishery on the Canadian Atlantic coast extends from Newfoundland to Cape Cod, while the stretch from the Bay of Fundy southward is practically a continuous fishing ground. Approximately two thirds of the total Dominion catch is produced on the Atlantic coast where they are mostly pickled and smoked. The latter are known on the market as "Kippered herring," or "Bloaters" if they are unsalted and half dried in the smoke-house. A comparatively small quantity is canned.

On the Pacific coast the species of herring is very similar and prevails in great abundance about Vancouver Island. Here the catches are so heavy that a boat load not infrequently totals

one hundred and fifty tons and it is not unusual to have to release the end of the net and dump one half of the catch in the sea in order to retrieve the remainder. Pacific herring is mostly dry salted and shipped in boxes to the Orient where an extensive market has been developed for it. A small quantity is canned but the proportion of the pack treated in this way is increasing every year.

Though the Atlantic catch as a rule exceeds that of the Pacific, British Columbia is the heaviest producer its proportion in 1920 being in excess of one million cwt. New Brunswick accounted for about half a million cwt. and Nova Scotia and Quebec each for about half this amount. The catch of Prince Edward Island was relatively small.

Large Export Trade

The Canadian herring would appear to be more in favor in other countries than at home and annually large quantities are exported making a brisk and steady trade. The fish leaves Canada in a variety of forms, fresh, frozen, canned, dry salted, pickled and smoked. In a canned state they go to the United Kingdom and United States, Australia, Brazil, British Guiana, Jamaica and Trinidad. The dry salted in addition go to Hong Kong, China and Japan; the pickled to Barbados, Dutch Guiana and Porto Rico. The total exports in 1918 amounted to \$2,974,282; in 1919 to \$3,799,105; in 1920 to \$3,409,498; and in 1921 to approximately the same amount.

The extent to which the herring prevails in Canadian waters and the wide favor its high food value and palatableness have won for it urge a greater domestic consumption and more vigorous efforts to expand the foreign markets. Thousands of men find employment at the present time in the fishery and tributary curing establishments; the catch is strictly limited to inshore fishery which indicates the possibilities of the extent of the catch and the employment created, were greater exploitation justified.

The Forests of the Yukon

The products of the forests of the Yukon have played no mean part in the development of that area and it may be enlightening to learn that the timber cut of this territory amounts annually to a substantial aggregate. Few people, unfamiliar with this northern adjunct of the Canadian Dominion, have any conception of the extent of the Yukon's wooded area and a writer in the Canadian Forestry Journal pithily describes the woods to be found there and their economic values. Arboreal growth in the far north is, of course, slow and the length of time it takes to produce a tree of commercial or economic proportions is naturally much longer than in areas farther south.

The principal forest trees of the Yukon are white and black spruce, balsam, poplar, and birch. These occur on the mountain slopes up to twenty eight hundred feet above the rivers and lakes. The white spruce is the most valuable tree and furnishes good timber for mining and building purposes. The best groves of these trees are found on the islands or the alluvial flats along the rivers, but good specimens have been encountered on the slopes of the hills to a height of two thousand feet above the rivers. As one goes farther north the spruce deteriorates in both appearance and size.

The balsam fir occurs only on the valley slopes mixed with spruce, beginning at an elevation of twelve hundred feet and continuing upward to the limit of the trees. Occasionally, in various parts of the territory, Jackpine is encountered, though this tree is comparatively rare of occurrence. Other trees which prevail on the river flats in quantities are cottonwoods, aspen, alder, spruce, and willows.

Cut in Last Fiscal Year

Up to the end of the last fiscal year, a total of two hundred and twenty million feet of lumber were cut in the Yukon territory in addition to three hundred and fifty thousand cords of wood on which Crown dues were paid. The Crown has received in dues for timber cut in the Yukon territory about \$611,000. The above figures are, however, no indication of the total cut as wood, logs and lumber used for mining purposes are not subjected to Crown dues and the amount used for such purposes can only be estimated.

Timber is not exported from the Yukon but its local value is inestimable and the territory could not have arrived at its present state of development without the aid of its forest resources. The great rush of miners and prospectors in 1898 was followed by a demand for lumber to build houses, sluice boxes and other mining equipment which saw the establishment of saw-mills at Dawson City, Selkirk and Whitehorse. Wood also formed the main fuel supply and is still used along the rivers for this purpose by steamboats. Mining is practically the only industry in the Yukon and logs and poles are used for cabin construction, timbering shafts and tunnels and previous to the introduction of modern machinery and power, for a greater variety of uses. A rough estimate of the total cut would be six hundred and sixty million feet of timber and more than one million cords of wood.

The development of the Yukon territory is only in its infancy; there are tens of thousands of square miles not yet prospected, vast mineral wealth undeveloped, and large areas of magnificent grazing lands capable of raising thousands of head of cattle.

Motion Picture Films

A print of each of the following films issued by this department is deposited with the representatives listed on the back page. These are available upon application for use by schools, theatres, clubs, societies, boards of trade, and other associations and organizations.

Homemaking by Irrigation.—Irrigation farming in Southern Alberta, the various operations and their results.

The Land of Promise.—Featuring the well-known agricultural section of Battleford, Saskatchewan.

Opportunity.—Illustrative of Western Canadian opportunity, morespecifically in the district of Lloydminster, Alta.

Livestock and Dairying.—The fine status and remarkable progress of this industry in Western Canada picturized.

Taming the Last West.—Depicting the evolution of the Canadian West from buffalo range to a modern agricultural area.

The Sunny Side of Rural Life.—The farmer on holiday, showing that life in Western Canada is not all work.

The Evolution of a Grain of Wheat.—The life of wheat seed from the time it is sown until its progeny enters into the composition of a loaf of bread.

Apple Growing in Evangeline's Land.—Orchard cult in the region Longfellow's poem made famous.

The Apple Harvest of the Okanagan.—Gathering and shipping apples in the beautiful British Columbia valley.

Curing Fish in Nova Scotia.—Depicting the various phases of curing and smoking fish in the Maritimes.

The Canadian Sardine.—The sardine caught, canned and distributed.

Some Water Powers of Eastern Canada.—The beautiful and powerful waterpowers of the Eastern Canadian provinces.

The Silver Fox Industry of Canada.—The domestic ranching of silver foxes in Prince Edward Island.

New Homes Within the Empire.—The camera follows the progress of a British immigrant from the first awakened interest in Canada till when he settles on a Western farm.

Departmental Publications

Any of the following publications will be sent free on request.

The Prairie Provinces of Canada.—A descriptive statistical booklet on the provinces of Alberta, Saskatchewan and Manitoba, with full information on the opportunities for farming in the West.

Business and Industrial Opportunities in Western Canada.—Full listings of industries existing and business openings in the provinces of Western Ontario, Manitoba, Saskatchewan, Alberta and British Columbia.

Why Canada.—Reliable and comprehensive information for the United States manufacturer, showing the advantages of establishing his industry in Canada.

Canada's System of Government.—Canadian government briefly outlined to portray its democratic traits.

The Story of Canadian Nickel.—History of the nickel mining industry.

Canadian Oil Exploitation and Prospects.—An expert engineer's history of Canadian oil development and future possibilities.

Canadian Water Power Development.—Authoritative and exhaustive survey of water power reserves and possible development.

Education in Canada.—The wide scope of Canadian education depicted to show that a settler need have no apprehension in this regard.

A Canadian Grain Handling Plant.—How Canadian grain is stored and shipped. Authoritative article on Canadian elevators.

Value of a Settler to Canadian Railroads.—Computation from reliable statistics of a farming settler's revenue-producing worth to Canadian railroads.

Bituminous Sands of the Athabasca Region.—Description with known values, and possibilities of development of the widely known tar sands of Northern Alberta.

The New Canadian Oil Field.—Dealing with the Arctic oil region of the new strike.

Water Powers of the Maritimes.—Authoritative article on the undeveloped power systems of the Eastern provinces.

Water Powers of Manitoba.—The water powers of this province dealt with exhaustively.

Oleomargarine.—History of oleomargarine in Canada and its future prospects.

Synopses of Natural Resources.—Forty-five pamphlets dealing briefly but concisely with Kaolin or China Clay, Oil Shales, Mica, Fluor-spar, Asbestos, Molybdenum, Magnesite, Fruit, Flax Fibre, Nickel, Coal, Clays, Salt, Copper, Zinc, Silver, Gold, Pyrites, Iron, Potash, Talc, Feldspar, Platinum, Phosphate (apatite), Manganese, Graphite, Cement, Barytes, Gypsum, Irrigation, Petroleum and Natural Gas, Corundum, Sulphates of Sodium and Magnesium, Timber and Pulpwood, Fish, Fur, Peat, Grazing Lands, Mineral Waters, Building and Ornamental Stone, Whaling, Sealing, Wheat, Oats and Barley, and Water Powers.

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Ask the Canadian Pacific about Canada



Agricultural and Industrial Progress in Canada

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MONTREAL

July, 1922

Canada's Fifty-Fifth Birthday

CANADA, on arrival at her fifty-fifth birthday, is yet a land of small and sparse population, and, taking account of this aspect alone, people in other lands frequently ascribe to the Dominion attributes and qualities of insignificance in other phases of her national life.

But with her population this atomic element ceases. In all her aspects Canada is to be thought of in terms of immensity. A land created on a Titan plan, of towering mountains, sweeping forests, horizon-bound plain, fertile valleys, expansive lakes and mighty rivers; all enterprise is conceived on a mammoth scale, and so in bringing these magnificent natural assets under human control, undertakings have in many instances surpassed in magnitude anything previously undertaken. The occasion of another birthday to the Dominion is sufficient excuse to make a rough survey of some of these.

Canada's coastline totals in length nearly one-half of the circumference of the globe, with 12,000 miles of sea coast and 220,000 square miles of freshwater fisheries; she possesses most expansive and potentially wealthy fishing grounds, and in Lake Superior shares with the United States the largest body of freshwater in the world and its most extensive inland fishery.

Her forest resources are second to none and she is the world's first fur producer. She is surpassed by only one country in the production of pulp and paper and by one only in her wealth of water powers.

Canada has a great reserve of virgin agricultural land with more than 200,000,000 acres of arable land in the Western provinces as yet

untouched by the plough and many attractive fertile farms available for immediate settlement in the East. Yet, with what she has under cultivation, she has already assumed second place amongst the wheat-growing nations of the world, with a 1921 production of over 300,000,000 bushels of such quality that uninterruptedly for ten years the Dominion has carried off the world's first honors for that crop.

This country, to which are ascribed such inappreciable qualities, has a virtual monopoly of certain valuable mineral deposits. With but one-half of one per cent of the world's population she produces 90% of its cobalt, 88% of its asbestos, 85% of its nickel, 12% of its silver and 4% of its gold. She possesses 17% of the coal resources of the globe and 71% of those of the British Empire.

Canadian enterprise has of necessity been planned and carried out on a scale compatible with these extensive resources. At Niagara Falls, Canada has great development of electrical energy, while the Queenston power

plant features the world's largest water-wheel-driven generators. At Bassano, watering the Canadian Pacific's vast eastern irrigation tract, is the continent's greatest irrigation dam, and at Gouin, at the head of the St. Maurice River, P.Q., is the world's biggest dam with a capacity double that of the Assouan on the Nile.

Among other features in which Canada leads is in possession of a vast game preserve in the Rocky Mountains, Alberta. This national park has an extent of 4,400 square miles and gives protection to 10,000 Rocky Mountain sheep alone.

These are but some few of the many big things Canada possesses—natural, agricultural, commercial and engineering—features of which

DOMINION GOVERNMENT ESTIMATE 1922 Crop Acreage

	1922	1921
Wheat.....	22,464,000	23,261,224
Oats.....	16,933,500	16,949,029
Barley.....	2,747,000	2,795,665
Rye.....	2,079,660	1,842,498
Peas.....	189,300	192,749
Mixed Grains.....	872,700	861,136
Hay and Clover.....	11,106,800	10,880,843

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Norman S. Rankin, *Editor of Publications.*
E. L. Chicanot, *Asst. Editor.*

a country yet in its infant growth may well be proud. Canada may yet be small in the number of her citizens, but time will remedy this; the stage is set and ready for that bigger population which, when it does come, will transform this country into one of the leading—if not the first—country of the world.

General Agricultural Situation.

By J. Dougall and T. S. Acheson, General Agricultural Agents, C.P.R., Eastern and Western Lines

Crop reports covering the Dominion for June 30th indicate a better general condition than for any year since 1915. Conditions throughout the country are generally satisfactory. The province of Quebec has suffered to some extent from excessive moisture, but it is not anticipated that this will affect any but the hay crop. A detailed estimate of all crops throughout the Dominion is shown on the front page, that of the Prairie Provinces being—

	1922	1921
Wheat.....	21,305,700	22,181,329
Oats.....	10,612,000	10,819,641
Barley.....	2,076,000	2,109,065
Rye.....	1,931,000	1,688,228

British Columbia.—Weather conditions have been variable during month and yield affected unfavorably to an extent. It is too early to make any definite estimate of fruit crops.

Alberta.—Rains have been fairly consistent over the entire province. Though some frosts were experienced in the northern districts reports state that no damage has been done. Rye is already headed out and harvest will commence at an early date. Generally, conditions may be said to be entirely satisfactory. Acreage estimates:—wheat 5,371,000; oats, 2,795,000; barley, 545,000; rye, 240,000.

Saskatchewan.—Farmers are generally optimistic, anticipating good returns from this year's crops. Rains have been general all over the province, and although some seeding was late all crops are doing exceedingly well. Frost did some damage to garden crops in northern districts though grains escaped. Estimated acreage:—wheat, 12,608,000; oats, 5,568,000; barley, 498,000; rye, 1,402,000.

Manitoba.—Weather has been cool and in some districts frost has affected garden crops but no damage has been done cereals. There has been ample rain throughout the province and the outlook is very bright, all crops being in good growing condition. Estimated acreage:—wheat, 3,326,000; oats, 2,249,000; barley, 1,043,144; rye, 289,000.

Ontario.—Ample rains throughout this province have put good crop returns for the year beyond any doubt. There has been some loss in winter wheat, but generally speaking this crop is good. Clover has winter-killed to some extent. Spring wheat is doing very well, and a good yield is assured. A normal crop of hay will be harvested.

Conditions in the fruit districts are reported excellent. Cherries will be somewhat light and wet weather has affected strawberries, but peaches and other fruits are expected to yield heavily. Estimated acreage:—wheat, 855,200; oats, 3,188,000; rye, 118,000; barley, 448,000; hay, 4,247,000; potatoes, 162,000.

Quebec.—Field crops are in excellent condition but some hay lands are flooded due to excessive rains in latter part of month. It is nevertheless estimated that the hay yield will be the best for some years. A good apple crop is expected. Estimated acreage:—wheat, 179,000; oats, 2,461,000; barley, 192,000; rye, 24,700; hay, 4,500,600; potatoes, 235,000.

New Brunswick.—Hay meadows are well advanced and clover crop in good condition, the yield of hay being estimated at over the average. Potato planting is completed and in many cases plants are above ground. Roots are all in and pastures in excellent condition. Estimated acreage:—wheat, 26,900; oats, 282,000; barley, 8,200; rye, 400; hay, 701,000; potatoes, 74,000.

Nova Scotia.—Conditions throughout the province are excellent. Hay meadows indicate a good yield; potatoes progressing favorably; and turnip and root seeding completed. Bright conditions prevail in the Annapolis Valley, apple trees having been heavily laden, and apparently well set. Estimated acreage:—wheat, 15,300; oats, 141,000; barley, 8,600; rye, 360; hay, 583,000; potatoes, 38,400.

Prince Edward Island.—General conditions in this province are very good. Estimated acreage:—wheat, 34,400; oats, 189,000; barley, 6,300; hay, 260,000; potatoes, 35,400.

Livestock.—Conditions in Western Canada are not altogether encouraging. Prices ranged fairly high at the end of May, which encouraged stockmen to ship unfinished cattle, and the markets became unsatisfactory towards the end of June. Good exporters are bringing fairly good prices. Hogs have been scarce and bringing good prices. The wool market was improved considerably through the advent of foreign buyers, growers receiving more than they had expected. The prices are apparently stiffening as the season continues.

Dairy Products.—Whilst the output of the dairy industry has no doubt decreased during 1922 the prices obtainable for these products during the latter part of June were more than satisfactory. Both butter and cheese markets have been very strong and should encourage farmers to increase their output of these products.

Canada as a Wheat Producer

Senator Calder, of New York, recently declared his conviction that the United States would soon fall behind Canada in the production of wheat. "The Dominion," he stated, "will develop several times the wheat acreage of the United States." Herbert Hoover, the United States Secretary of Commerce, but a short while previously had been responsible for the statement that the United States would in ten years become a wheat importing nation. In 1921 the United States was the world's first wheat producer, whilst Canada had risen from the third place she held the year before, to that of second among the wheat producing countries of the world.

"The peak of wheat acreage in the United States," Senator Calder said, "was 75,694,000 acres, reached in 1919, an increase of 35 per cent over the wheat acreage of 1910. Canada, in the same year, had 19,125,969 acres seeded to wheat,

Agricultural and Industrial Progress in Canada

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an increase of 115 per cent over the 1910 figure." But this figure was by no means a peak for Canada, but merely a step in a series of gradients. The 1921 acreage was 23,261,224 in Canada, or an increase of more than 21 per cent over 1919. In addition to this the Prairie Provinces, where the greatest expansion in acreage is taking place, will have, according to the estimate of the Western Agricultural Agent of the Canadian Pacific Railway, an increase of nearly 39 per cent over last year, not all, but a large section of which, will be devoted to wheat.

The production of wheat in the United States increased from 635,000,000 bushels in 1910 to 833,000,000 bushels in 1920, an increase of approximately 35 per cent. In the same period Canada's wheat production increased from 149,989,600 bushels to 263,189,300 bushels, or an increase of 70 per cent. The value of the wheat crop in the United States during the decade increased by 100 per cent, or from \$560,000,000 to \$1,197,000,000. In the same time the value of Canada's wheat crop increased by 400 per cent, or from \$99,530,000 in 1910 to \$427,356,000 in 1920.

Canada's Grain Production only Beginning

It must be borne in mind when considering these figures and noting the lengthy lead the United States still has over Canada in wheat production, that the former has to all intents and purposes reached its zenith of production—in fact the tendency is for a decline—whilst the Dominion, in view of the minute portion of her area under cultivation, and the wonderful possibilities of development, may be considered as having merely entered the lists. Whilst in the three Prairie Provinces of Manitoba, Saskatchewan and Alberta there are less than 121,000,000 acres under private ownership, much of which is not under cultivation, there are approximately 25,000,000 acres of a surveyed total of 200,000,000 acres available for homestead entry. In addition to these surveyed areas, there are tracts which have been only partly surveyed and which contain more than 250,000,000 acres.

The biggest factor in increasing Canada's wheat acreage in the past, and one whose effect will be felt to an increasing extent in the future, is this very availability of large tracts of land upon which hinges the price of farm wheat lands, and which determines the price at which wheat can be grown. The average price per acre of land devoted to wheat growing in the United States has been returned at \$92, whilst the average in Canada of settled wheat land has been unofficially estimated at \$43 per acre. That this is not a just estimate for all purposes is evident when it is considered that the average price of settled farm lands in Saskatchewan and Alberta, most of which are wheat lands, is less than \$25 per acre, and in addition there are these

large tracts which may be acquired for a lesser sum or for the price of filing on them.

The future of Canadian wheat is also pre-
saged by its excellent quality, which is beyond question. This has been attested by ten years of uninterrupted successes in carrying off the wheat championship of the world, to be wrested from Canada last year by the State of Montana, only by means of seed of Canadian origin.

How long will it be before Canada is leading the world in the production of wheat? At the present time she occupies the second place in this regard, and a country of less than nine million people is accounting for approximately one-quarter the wheat yield of the United States, a land of more than one hundred and nine millions. In the last decade Canada's wheat production increased by 70 per cent, and granted the agricultural immigration, which would seem to be promised her with all the attractions she has to offer, and the settlement of a further portion of her vacant acreage, the present decade should see at least a hundred per cent increase and Canada the granary not alone of the British Empire, but of the entire world.

Agriculture in Prince Edward Island

Prince Edward Island received the name of "The Million Acre Farm," "The Denmark of Canada" and other soubriquets, devised in an endeavor to succinctly describe the unique place the little island province occupies in Canadian agricultural life. The island is, in reality, one large farm of 1,398,000 acres, of gently undulating surface and copses of stately trees and clumps of brush, with wild bits of woodland, and arms of the sea cutting in to the land in all directions. It is a region of transcendent loveliness and rural tranquillity, where truest beauty blends with agricultural activity; to the inhabitants just "the island," for to those who live upon it, it is without rival among the many bright jewels of the ocean.

Agriculture affords direct livelihood to fully eighty per cent of the province's population of 88,615 people and indirectly to a large percentage of the remainder. While the domestic rearing of foxes has of late years somewhat overshadowed other phases of agriculture, a revenue of \$1,240,000 being produced from this source in 1921, it is the most economic province of the Dominion, producing enough annually to supply its own needs and having enough left over to engage substantially in export.

In its limited area it has more tillable land than any of the other Maritime provinces and practically the whole island is under cultivation. Mixed farming and scientific dairying are the most profitable phases of its agriculture, while beef cattle are raised in sufficient quantities to supply local needs and permit of export to the mainland. Expert poultry raising has resulted

in a voluminous egg export trade; whilst the flavor of island mutton and lamb has long established its popularity. Fruit growing is a pursuit which has attained important proportions and yet leaves considerable room for expansion.

Nearly 14,000 Farms in Operation

There are in Prince Edward Island 13,888 farms which in 1921 accounted for a crop production of nearly fifteen million dollars and in the previous year of higher agricultural prices, for more than nineteen million dollars. In 1921, 34,106 acres of wheat returning an average rate of 16.75 bushels per acre, gave a total provincial yield of 573,000 bushels. The oat acreage of 189,453, at an average of 27 bushels to the acre, yielded 5,118,000 bushels. A total of 6,334 acres of barley at 23.25 bushels to the acre, accounted for a gross production of 147,400 bushels. There were 212 acres seeded to peas which yielded 23.50 bushels to the acre or a total of 5,000 bushels. An acreage of 36,921 of potatoes, at an average of 162 bushels, returned 5,965,820 bushels. The 255,010 acres of hay and clover at an average of .8 of a ton, returned a total of 215,174 tons.

Prince Edward Island potatoes have for some years been renowned over the continent and in general demand for seed. Experiments conducted in the states of Virginia, New Jersey, Maine and Vermont definitely established the fact that island grown potato seed meet all the requirements of these states and there has consequently been importation of considerable volume. In the year 1921, 60 carloads, or 48,000 bushels of certified seed potatoes were shipped from Prince Edward Island to various parts of the United States.

Dairying Horses and Cattles

Dairying is an industry on which the island particularly prides itself and one in which every endeavor is made to maintain the fine type of dairy cattle and improve the excellency of the product. Only one of the signal achievements of the island in this regard was the securing a short while ago of the four-year-old Canadian milk production record by the Charlottetown Ayrshire "Buttercup of Glenholm" which under a 365-day test produced 16,444 pounds of milk and 662 pounds of fat, the milk production being 400 pounds in excess of any previous record in the class. There are thirty-five creameries and cheese factories on the island which in 1921 were responsible for producing 1,681,774 pounds of cheese worth \$294,155 and 1,169,098 pounds of butter worth \$440,050.

The province has 31,311 horses and 138,195 cattle, uniformly of exceptional breeding. There are 71,923 sheep 59,840 lambs, and 42,447 swine. Whilst Prince Edward Island is the smallest province of the Dominion, it produces proportionately more cattle than any state of the American Union with the single exception of

Iowa. Island sheep have developed a considerable industry to which the rolling lands are specially well adapted, and in 1921, 28,797 pounds of wool were received at Charlottetown by the Prince Edward Island Sheepbreeders' Association. Nearly one million dozen eggs are sold annually, productive of a revenue of nearly half a million dollars.

Prince Edward Island is almost unique on the American continent as a purely self-supporting agricultural area. It is a region of prosperous farms and picturesque comfortable farm homes, where the tranquil serenity of the countryside is reminiscent of old world scenery, and the most desirable of living conditions prevail. For those who would combine the life beautiful with the pleasantest of agricultural activities, no spot could be found more delectable than little Prince Edward Island over whose rolling farm lands blow the fresh salt breezes from the Atlantic.

Thirty Years' Successful Farming

In a period when the profession of farming is more or less stagnant, when the tendency in so many countries is from the rural districts to the cities and industrial centres, and the oft-made complaint is that the ardors and deprivations of an agricultural life are not commensurate with its compensations, it is consoling to read the history of a satisfied farmer of thirty years' standing, one of the continent's premier agriculturists, celebrating his seventieth birthday in the tranquil satisfaction of the honors which have come to him in his chosen profession.

Such a man is Samuel Larcombe, of Birtle, Manitoba, who expresses pride in the realization of the signal part he has played in making the possibilities of Western Canada known to the world.

The record of Mr. Larcombe's thirty years of farming is almost phenomenal. In that period, with the products of his Manitoba farm, he has carried off no less than three thousand prizes, including the world's championship for wheat at the Peoria International Fair in 1917 and the sweepstake for the best individual farmer's exhibit as well as the sweepstake for wheat in the dry-farming section at the World's Soil Products exhibition in Kansas in 1918. His Canadian successes constitute an aggregate which gives him an average over his farming years of one hundred prizes per year.

Born in a Devon Village

Born in a little Devon village and for ten years following the pursuit of market gardener, Mr. Larcombe's experience forms a further addition to the examples of outstanding success achieved by immigrants from the British Isles, unacquainted with Western conditions. He came to Winnipeg in 1889 and proceeded to Birtle, where even then existed a thriving colony

of old country farmers. After a year's experience as hired man with a farmer in the district, he rented a farm which, after five years, he purchased and still occupies.

At a time when everyone was engrossed in wheat he concentrated not so much upon grains as on vegetables. His first local exhibit won three prizes, and in his first ten years of farming he made forty entries and secured 134 awards. From 1905 to 1908 he grew roots, vegetables and grain for the Canadian Pacific Railway for exhibition purposes in other countries, and produced citrons, cucumbers, pumpkins, squash and marrows for the Dominion Government for the same purpose.

Mr. Larcombe's career as an exhibitor has been one consistent succession of triumphs too lengthy to mention in detail. His international successes have brought considerable renown to Western Canada and widely advertised the wonderful possibilities of intelligent farming with assiduous application. Mr. Larcombe recently celebrated his seventieth birthday on the farm which has been the scene of every one of his achievements. He can look back over his thirty years of agricultural life in Manitoba with supreme satisfaction in the knowledge that in winning renown and prosperity for himself he has pointed the way to thousands of his fellow-countrymen.

Tractors in Western Canada

In the development of Western Canada's huge tracts of fertile farm lands, the use of mechanical equipment, especially the tractor, has proved an important factor. The farmer in the West is not restricted like his brethren in the older settled districts in the amount of land which he can acquire, for on the Prairies he can purchase large areas of land at prices which are low in comparison with their producing power. At the present time it is not uncommon for a farmer in Western Canada to have a farm thousands of acres in extent, and the cultivation of such farms has resulted in the utilization of tractors on a large scale in order that the farmer may receive from his lands the greatest return possible in proportion to the amount of labor expended thereon.

While the horse is still in use on a great many of the smaller farms in the Prairie Provinces, the tractor is now acknowledged as the most economical and efficient instrument for the breaking and preparing of large tracts of land for agricultural purposes. It is not uncommon in the early spring to see a battery of tractors chugging their way across some large farm, getting the land in shape for seeding. It was found on investigation that the tractor was operated in Western Canada last year on an average 88 days, 37 days of which are credited to plowing, 19 to 22 on the land, and 10 days to other work.

A questionnaire recently sent out by the "Nor-West Farmer" to owners of tractors in Western Canada elicited a great amount of valuable and interesting information. Forty-seven per cent. of the reports indicated that the tractor was growing in popularity; 13%, tractor was losing its popularity; 78%, that banks adopted a more or less unfavorable attitude toward lending money to tractor owners or prospective purchasers; 15%, favorable attitude by banks towards tractors; 13%, anticipate a good demand for tractors in 1922; 43%, a fair demand; and 23%, a poor demand.

Farmers Operate 30,000 Tractors

From actual reports of manufacturers and distributors, it has been computed that 3,428 tractors were sold in the three Prairie Provinces in 1921, as compared with 10,200 in 1920; 9,000 in 1919; 7,500 in 1918; and 5,000 in 1917. Saskatchewan being the largest grower of wheat naturally purchased the greatest number of machines, accounting in all for 1,655. Manitoba was second with 1,057 and Alberta third with 716. In addition 97 steam engines were purchased last year, 54 being bought by Saskatchewan, 30 by Manitoba and 13 by Alberta. The estimated total ownership of tractors in Western Canada in 1921 was 30,000, with an estimated value of \$24,250,000. In fixing the valuation for 1921, allowance has been made for the general reduction in inventory values, as well as a substantial decrease on account of depreciation.

The majority of tractors at the present time are used for a great many purposes, other than breaking, discing, etc. They can supply power to a blower for filling a silo, run the threshing machine, etc. Replies to the questionnaire above referred to indicate a general feeling of satisfaction with dealer service, operation of machines and return on investment. Seventy per cent. of the replies indicated that the tractor was used as much as ever last season; 85%, that another tractor would be purchased when necessary; 60%, use tractor for both belt and field work; 28%, use tractor for belt work only; 12%, use tractor for field work only. Last year it was estimated that 17% of the threshing machines in Western Canada were operated by steam traction engines.

Thirty Tractor Manufacturers Represented

These machines must have constant attention and are often in need of spare parts, which has resulted in a large number of machine shops being operated in farming districts, where tractors are used, to cater to this trade. In addition many of the tractor manufacturers have established their own repair shops and have established also agencies where spare parts can be obtained without delay. Practically every nationally-known tractor manufacturer has branch offices and warehouses in Western Canada or has an officially accredited representative. During 1921, there were 21 American manufacturers represented in the Prairie Provinces, eight Canadian firms and one English concern.

While 1921 was not a very good year for the tractor trade in Western Canada, due to the unsettled state of the market for farm products in general and particularly wheat, it is the majority of opinion that 1922 will see a resumption of tractor activity on a fair scale. The lack of funds for capital investment last year hampered sales to a great extent, but from present crop prospects, as well as the staple condition of the market, 1922 and 1923 should witness much activity in this industry.

The Standardization Movement in Canada

By R. J. Dürley, Secretary, Canadian Engineering Standards Association

In Canada, as in other countries, some popular uncertainty seems to exist as to the use of the term "Standardization," some taking it to include only the work of measuring, calibrating or comparing scientific instruments, measures of length and so on, while others understand that it refers to the preparation of such designs, dimensions or specifications in industrial, manufacturing or construction work as will be generally accepted and worked to by all concerned.

The latter is, of course, the line of work along which the activities of the Canadian Engineering Standards Association are directed.

The first steps towards the organization of engineering standardization work in Canada were taken in 1918, when, at the suggestion of the British Engineering Standards Association, a committee of prominent Canadian engineers and industrialists was formed to deal with the matter.

This Committee, after a good deal of preliminary work, came to the conclusion that a distinctively Canadian Standardization body was desirable, and that owing to the industrial and economic conditions existing in Canada, the Committee or Association to be formed should have a wider scope than could be possessed by any committee forming part of a British or American organization. Industrial and engineering work in Canada is, however, so largely influenced by our proximity to the United States, and by the close commercial relations existing with Great Britain, that any Canadian Engineering Standards Committee or Association must necessarily keep in the closest possible touch with the bodies doing similar work in those countries.

An Association Formed

It was accordingly decided to form an Association, the constitution of which was to be modelled on that of the British Engineering Standards Association and which should be fitted to act as the central organization for industrial standardization in Canada. It was thought essential that this body should be supported and largely maintained by the industries concerned, while at the same time the support of the Federal Government was considered indispensable.

The original Committee was accordingly enlarged and expanded, and in 1919 the Canadian Engineering Standards Association was incorporated by Dominion Charter. Its Main Committee, the duty of which is to direct and manage the affairs of the Association, to appoint the chairmen and members of the working committees, and to examine and approve proposed standards before publication, is composed of forty-three members, part of the membership being nominated by such bodies as the Engineering Institute of Canada, the Canadian Institute of Mining and Metallurgy, the Canadian Manufacturers Association, the Engineering Schools of the Universities, and other public and semi-public bodies, while certain other members are nominated by the principal departments of the Dominion Government, and the remainder are co-opted as being desirable representatives of important industries such as railway work, pulp and paper manufacture, steel manufacture, and the like.

The Main Committee has appointed a number of Sectional Committees, each charged with the duty of supervising the activities of the working committees in some particular branch of industry. For example, Sectional Committees include Aircraft Parts, Electrical Work, Rails and Track, Wire Rope, Steel Bridges and Construction, Screw Threads, Machine Parts, Mining Machinery, Steel, Cement and Concrete, etc.

Under each Sectional Committee there are organized the necessary Sub-Committees (at present 18 in number) which are actually responsible for the technical work of formulating proposed standards.

Many Features of Particular Difficulty

The experience of the last two years has shown that standardization work in Canada presents features not only of particular interest but also of special difficulty. While it would appear at first sight that in many instances British or American standards could be adopted without change, owing, in the former case, to the fact of geographical proximity and industrial connection, and in the latter, to the intimate commercial relationship existing, this is not always found to be the case in practice. Differences in industrial conditions and in the class of material and workmanship available, differences in climatic conditions, and in legislative restrictions, tend in many cases to make differences in practice necessary or advisable.

Our Committees have to bear in mind in framing their requirements that while domestic industry must receive the first consideration, the interests of the purchaser and importer are also affected, since in many branches it is necessary for us to import not only material in a raw or semi-finished condition, but also manufactured machinery or completed engineering products.

Speaking generally, it may be said that as regards dimensional standards, as, for instance, in ball bearings, screw threads, gearing, and the like, American practice is usually followed, and in many cases it may be found desirable to adopt American standards without alteration. In other cases, as, for example, the preparation of specifications for material, the influence of local conditions is often strongly felt, and in such instances specifications of our own, possibly differing from both British and American practice, are being developed. The closest co-operation is, however, being aimed at, both with the British Engineering Standards Association and with the American Engineering Standards Committee, and it is even hoped that in the case of certain British and American Standards it may be possible for the Canadian organization to assist in bringing about international agreement.

Its Connection with Railway Work

In connection with railway work, the interchange of traffic obviously makes it necessary for Canadian practice to agree substantially with American standards as regards locomotive, car, and track work, and our railway bridge specification is in general agreement with the practice adopted by the American Railway Engineering Association.

During the past eighteen months our Association has published among other subjects, specifications for steel railway bridges, for distribution type transformers for galvanized telegraph and telephone wire, and has in preparation many other important specifications.

The Association is now endeavoring to arouse Dominion wide interest in the matter of safety codes as affecting public safety in such important connections as elevators, saw-mills, machinery, electrical work, etc., with a view of organizing a thoroughly representative committee and bringing persuasion upon the various provincial governments in order to unify their requirements and remedy the present unsatisfactory conditions. In this work there is no doubt that the results of the activities of the two American Committees dealing respectively with the National Electric Code and the National Electric Safety Code, will be fully considered and appreciated.

Much of the Safety Code work now being actively pressed forward in the United States is of great interest to Canadian industry and in many cases we have received cordial invitations to co-operate, which have been greatly appreciated.

Cold Storage in Canada

The rapid growth of cold storage in Canada during the past quarter of a century is not surprising when the multifarious uses to which it is put are taken into consideration. Without regard to climatic conditions, whether in the hot, torrid summer or cold winter months, the consumer can secure unseasonable goods in seasonable condition from the cold storage plant. Not only does the modern cold storage warehouse perform the functions of a storehouse, but also acts as stabilizer to the state of supply, storing and distributing goods as the state of the market warrants.

In 1907 the Canadian Government, recognizing the importance of cold storage facilities and desirous of having a well-formulated policy for the future guidance of the industry, passed a bill entitled "The Cold Storage Act." This Act, among other things, provides for subsidies to individuals or companies towards the construction of cold storage warehouses open to the public, and is administered by the Federal

Department of Agriculture. Up to and including 1920, the Dominion Government had subsidized 34 cold storage plants, with a refrigerated space of 4,928,304 cubic feet, to the extent of \$684,856.

A census of subsidized and non-subsidized cold storage plants in Canada in 1920 by the Federal Bureau of Statistics, disclosed the fact that there were 322 plants in operation with a refrigerated space of 33,247,774 cubic feet. Ontario led all other provinces, accounting for 99 plants with a space of 11,100,757 cubic feet. Quebec was second with 56 warehouses and a space of 6,298,104; followed by British Columbia with 38, 4,129,208; Manitoba 42, 4,006,147; Alberta 20, 3,806,835; Saskatchewan 22, 1,560,306; Nova Scotia 18, 1,097,976; New Brunswick 22, 969,541; Prince Edward Island 4, 234,000; and the Yukon 1, 44,900.

The Advantages of Cold Storage

The meat industry is probably the best example of the usefulness of cold storage in Canada. The Prairie Provinces, which are the big producers of meat, are located at a considerable distance from their main markets, which in the early ranching days was an almost insurmountable obstacle to the growth of the industry, forcing the ranchers to ship their cattle long distances, resulting in a loss of weight of cattle during shipment. With the establishment of cold storage plants at convenient points throughout the Prairies, this loss was reduced to a minimum, and the packer was able to put up large quantities of meat products without fear of deterioration through lack of immediate sale. In order that these products might reach distant markets in a fresh condition, a special railway car was devised with cold storage accommodation, large numbers of which are in daily use.

In the fruit districts of British Columbia and the Maritime Provinces, cold storage facilities have been established on a large scale without which the annual loss to the growers would amount to millions of dollars. It is seldom that the market can absorb the total fruit crop at time of marketing, and it is therefore necessary to store the surplus or manufacture it into jam in order to avoid loss. In this way, little if any fruit is lost through spoilage, and the surplus is stored until a more opportune time presents itself for disposing of the crop.

For Dairy and Poultry Products

Another manner in which cold storage is utilized and which is probably the most familiar to the average citizen, is the storage of poultry and dairy products. During the summer months it is essential that these commodities be kept in a cool place, and doled out as market conditions demand. In that way a well-balanced state of supply between the producer and consumer is established.

There are now in the course of construction throughout Canada, or have been completed since the last census was taken, several modern and commodious plants, notably that of the Montreal Harbour Commission's warehouse, which is one of the largest on the North American continent. This plant is designed to provide 2,000,000 cubic feet of dry storage, 1,500,000 feet of cold storage and another million feet of cool storage. The building is estimated to cost in the neighborhood of \$2,250,000.

Investigations are being made at the present time by various organizations interested in the feasibility of slaughtering Canadian cattle in this country and shipping the product across the Atlantic to England in cold storage as market demands warrant. Should this scheme bear fruit, it would mean a tremendous impetus to the cold storage industry and do much towards the rehabilitation of the Canadian Cattle Industry.

The Port of Vancouver

Having a regard for that vast volume of trade which in the future must come out of the East to the American continent, many men credited with powers of accurate foresight have predicted for Vancouver a status second to none in the Canadian Dominion. Certainly as the port of that great and expanding West, whose sensational growth becomes minute in view of the limitless possibilities of expansion, and as securing an ever greater proportion of the Oriental trade whose volume grows steadily larger, Vancouver faces a future of greatness and prosperity as a port. It is already beginning to feel this and is impregnated and instigated by a sense of greatness to come.

This importance was first experienced, in common with the Dominion, as it emerged from the period of the war years, and resulted in a fresh stimulus to port activities. Since then two events have transpired to set Vancouver in a bound, several years ahead in progress judging by its previous rate of advancement. One of these has been the passing of the Emergency Tariff and later the permanent tariff by the United States, and the other the proving that Western Canadian grain could pass through the torrid temperature of the Panama Canal zone without suffering any injury in transit.

The new tariff has sent the bulk of Canadian grain to Canadian ports instead of across the border, and the possibility of shipping grain to Europe via the Panama Canal has permitted Vancouver to share with the Atlantic ports in shipping the annual harvest of the western prairies. In the future a greater proportion of the annual crop of Manitoba, Saskatchewan and Alberta must pass out by the Pacific coast, at the one time relieving the congestion on the Atlantic whilst reacting to the benefit of the Pacific coast port. The rising favor of Canadian hard wheat in the Orient over the softer varieties of the United States has also been a factor in increasing Vancouver's grain export trade.

First Grain Shipment via Panama

The first shipment of Western Canadian wheat was sent to England via the Panama Canal, much as an experiment, in the season 1919-20. When the news was received that wheat had never been received in better condition a new era commenced for the port, and other shipments followed, up to the end of the season totalling in all sixteen thousand tons. The crop of 1921 began to leave from Vancouver practically as soon as threshed, and shipments are still continuing to leave for the Orient and, by way of

the Panama, for Europe. Before the end of 1921 more than two million bushels of wheat had left the Pacific coast for England and approximately the same amount was shipped to Oriental ports. By the first of June this year, approximately seven million bushels had left Vancouver, England and the Orient taking approximately equal amounts.

The same stimulus to trade was exhibited in other of the province's lines of export activity after the war, and in none was this new spirit so pronounced as in the lumber trade. Greater realization was awakened in Pacific coast lumbermen of the possibilities of the export trade, and they not only made an endeavor to maintain those fields which had been developed purely as a result of the war, but penetrated into new directions and found new outlets. Every month of the year saw representatives of coast companies leaving to drum up business in other countries, and their endeavors have been remarkably successful, especially in the countries of the Orient, with whom at the present time it is a difficult matter to supply the demand. Ocean shipments of lumber from British Columbia during 1921 to foreign countries totalled 164,000,000 feet; shipments to Japan and China accounting for 93,000,000 feet; Australia and New Zealand 27,000,000 feet; the United States 13,500,000 feet; United Kingdom 9,000,000 feet; and other countries 21,500,000 feet.

Increasing Lumber Shipments

This does not include large quantities of box shooks and shingles, nor the export by rail to the United States. Approximately 2,000,000 shingles were cut by mills in British Columbia in 1921, of which ninety-five per cent went to the United States. A total of 700,000 bundles of shingles were shipped in that year to United States Atlantic ports and 24,600 tons of box shooks went to Australia and Singapore. The total shipments to the United States of British Columbia showed a remarkable increase in 1921, amounting in all to 26,712,000 board feet, of which 20,000,000 went to California and the remainder to Atlantic coast ports. Previous shipments to the United States were in 1916, 3,565,000 feet; in 1919, 5259,000 feet; and in 1920, 4,162,000 feet. The whole situation is extremely gratifying when it is noted that total shipments to all countries in 1920 amounted to only 146,000,000 feet and that in 1919 they were only 108,000,000 feet. A year still farther back they amounted to only 93,000,000 feet and in 1917 to 44,000,000 feet.

Vancouver has, in fact, undergone a truly remarkable expansion in the past few years, due almost entirely to the new importance of the export trade of her port. Customs returns at the port of Vancouver during the last fiscal year amounted to \$12,986,875, an increase of \$3,400,000 over the returns of the previous year. The number of deep-sea ships entering the port in 1921 was 389 as against 336 in the previous year, and 11,485 coastwise vessels, local and foreign, found harbor there. During the past two years new direct steamship connections have been opened up at Vancouver, and thirty-four regular lines of steamships use the port as a terminal in addition to many irregular tramp steamers and sailing vessels. These reach every country of the world in their activities.

The Erection of New Elevators

Vancouver's new status as a port of grain export has naturally caused certain congestion with the duty of shipping such a volume of the season's crop, and it is stated that a yet greater proportion of the harvest would have come down to the Pacific had the facilities been at hand to accommodate it. The storage capacity of Vancouver port has been only 1,266,000 bushels, totally inadequate to the present traffic, and the first step in remedying this situation is the erection of a 150,000 bushels elevator, the capacity of which can be increased to one million bushels. A further development of Vancouver's grain trade has been the establishment of a full-fledged grain exchange in the city which transacts all grain business and sets the price for Western grains.

The Canadian Pacific Railway has duly recognized the new importance Vancouver is assuming and is making preparations for the handling of a much greater volume of both freight and passenger traffic. A large ocean pier is being constructed at Vancouver port by the company, 800 feet long (with provision for extension later), 328 feet wide, to have four railway tracks and be equipped with the most modern facilities for handling passengers and freight.

There is not a cloud on the horizon of Vancouver's future. It is often predicted that it will become the Pacific coast's first port, and this is no wild fancy when the phenomenal development of the Canadian West is taken into account and allowance made for a future expansion. British Columbia is itself a province of immense potential wealth whose resources, in their barely scratched present state, are worth about \$410,000,000 annually in production. Just as the whole future of the Canadian West is assured, so it is inevitable that its principal port, Vancouver, shall expand and prosper in proportion.

Industrial Outlook in Western Canada

*By John Sweeting, Industrial Agent,
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Business is improving. Each week now there are more definite gains in volume of trading, a much better feeling throughout the West on future trading and prospects, with, at the time of writing, a very excellent condition of crops.

Construction work is bidding for a fair average year, better than 1921, with possibilities of late summer development of contracts now held up. There is noticeable extension of some existing plants, where proposals are on foot to increase capacity. Lumbering conditions are better, export trade fair and prairie market increasing its demands. Mining operations are gaining in number and output. The proposals of the Consolidated to build a concentrator at the Sullivan Mine, Kimberley, B.C., will largely increase capacity at Tadanac for taking care of ores; the market appears to be able to absorb output, with even better conditions in the near future.

With the bringing in of the second well in Montana, just south of the Alberta boundary, an impetus has been given to oil prospects in the "Foothills Province," and there are likely to be many outfits working during the summer, testing the prospective field on this side of the line.

Pulp and paper plants in the West are doing good business. The plant at Dryden is spending half a million dollars on improvements, while in addition to the Provincial's large paper plant at Port Arthur, now under construction, the other pulp mill at that point is likely to build an additional 50-ton unit. The Fort William Company may start on its paper mill this year. On the Coast, conditions in this industry are quite good.

Steadily Improving Business

Other industries are steadily showing improvement, orders coming in well and demanding enlargement of premises. Several additional

brick plants are getting under way to take care of building requirements. The pottery plants at Medicine Hat are working full time with plenty of orders in sight, and all foundries and steel fabricating works show increasing demands for their products.

The labor situation has improved, the men being gradually absorbed, and there should be little difficulty in this respect for the balance of the year.

The fruit industry in British Columbia promises a good season; weather conditions have been excellent, but early yet to predict volume of crop as compared with last season. Small fruits are also slated for a good crop, with potato acreage and other vegetables about up to the usual area.

Without undue optimism, it can be said that the Western situation is far better than it has been for some years past. There is more confidence and a more definite reason for confidence than hitherto has been justified, and there appears to be every reasonable ground for the statement that conditions have improved and that the upward tendency will continue. The close examination which the writer has made into conditions throughout the West as far as the railhead on Vancouver Island, has disclosed steadily improving business, leading one to the conclusion that the turn has now been made.

Wild Life and Fur in Manitoba

Before all else the province of Manitoba still suggests to the rest of the world premier wheat; and for many years the popular conception of the economic value of the "postage stamp" province was circumscribed by myriad wheat fields all turning out "Manitoba Hard" and giving the name world renown. It is relatively a short space of time since the same province, its boundaries extended to embrace the waters of Hudson's Bay, made another bid for world fame by the discovery of valuable minerals in its northern area which, judging by the ever increasing discoveries and in view of the small amount of exploration and development completed, are assuredly of wide range and extent. These are merely two of the province's valuable assets, and there are many others less widely known and not as sensationally advertised because they are longer established and maintain a growth that is free from the spectacular.

Among these may be mentioned Manitoba's big game and fur producing fauna. These have proved sufficiently profitable and alluring to attract sportsmen and commercial trappers in considerable numbers and the northern area would exert a still more potent charm had not the province achieved a greater fame in agriculture and industry. It must be borne in mind, however, that industry is yet practically confined to Southern Manitoba and that agriculture has not yet assumed important proportions in that northern area which, since being added to the province's area, is developing as a mineral field. North of the line of accessibility by railroad to the shores of Hudson's Bay stretches an almost virgin land of forests, lakes and plains, the range grounds of the wild creatures, a portion of which each year pay toll to the sportsman and trapper.

Many Varieties of Deer.

In all parts of Manitoba where there is any extent of wooded or scrub land, many varieties of deer are to be found, the jumping deer, the mule deer and the blacktailed

deer. Their haunts may be considered accessible without the organization of a regular prolonged expedition. The Virginia deer has come into the province with the plough and is to be found solely in agricultural areas. In fact, it is stated that there are hundreds of this species within thirty miles of the city of Winnipeg. The Wapiti, or elk, handsomest of all the deer tribe, is to be found now only in the heavily wooded hill regions, and it is gratifying to learn that after several years of depletion this prepossessing species is on the increase. Undisputed lord of the north roams the gigantic moose. It keeps far from the haunts of humankind, but is plentiful in the north and to the east of Winnipeg. In many districts the moose are increasing, due largely to the greater precautions against forest fires, their worst enemy. Game licenses, issued annually, exceed fifty thousand.

Many valuable fur-bearing animals range in the unsettled areas of northern Manitoba, among them being badger, bear, beaver, coyote, weasel, fisher, fox, lynx, marten, mink, muskrat, otter, rabbit, raccoon, skunk, wolf, and wolverine. In the season 1920-21 the value of Manitoba's fur production was \$1,055,865, taking a position behind the provinces of Ontario, Quebec, and Alberta only. The most valuable animals in respect of total catch were in order, muskrat, beaver, mink, marten, otter, weasel, fisher, red fox, cross fox, silver fox and coyote. A more substantial catch is expected to be reported as a result of provincial operations in the past season, it being stated that a million dollars' worth of furs were marketed in The Pas alone, and the entire catch estimated at \$2,000,000. Three thousand Indian trappers supplemented by three hundred white took toll of the provincial wilds in the past winter.

The Establishment of Fur Farms

The larger phases of agriculture having, in the past, occupied a practically exclusive attention, fur farming has not yet assumed a very important status, though a successful beginning has been made, and the industry will doubtless witness considerable expansion in the future. With all the requisite conditions for successful domestic breeding and the numerous opportunities waiting to be taken advantage of, this supplementary industry to trapping should become a valuable addition to the province's sources of revenue. The 1920 returns of the Bureau of Statistics showed the existence of only two fur farms in Manitoba, the value of whose land and buildings was \$86,268 and of the two hundred silver foxes thereon \$185,770.

Several fur farms have been established since the last government returns were compiled and are now in successful operation, and considerable interest is evinced in this interesting phase of agriculture throughout the province. Certain parts offer particularly advantageous openings for engaging in the domestic rearing of a variety of animals. For instance, under the rigorous protective measures which have been in force, beavers have increased in numbers to a surprising extent, and according to an authority there are more of these valuable little animals within one hundred miles of Winnipeg than in the whole of Northern Manitoba.

An extension to trapping activities and the further establishment of domestic fur ranches in the province has been encouraged and stimulated by the establishment of periodical fur sales in the city of Winnipeg, the first of which took place in 1920. Winnipeg is now a barter centre for the provincial catch as well as for skins coming in from other areas. Buyers have attended these sales from all parts of the continent, and approximately half a million dollars' worth of pelts has been disposed of at each auction.

The fur catch of Northern Manitoba will permanently remain of some volume, as much of the area at present supplying furs will never be wrested away by other industries and against the inevitable depletion stands the growing interest in domestic ranching. Manitoba conditions are conducive to the production of the finest furs, and in time the fur farm may vie for renown with the wheat farm in the province.

Across Canada—Saskatoon

Saskatoon claims to have achieved a more rapid and spectacular growth than any city of Western Canada, and when one views the extensive and beautiful city situated upon the banks of the Saskatchewan River and realizes that twenty years ago, when cities such as Winnipeg and Vancouver had already attained continental and world renown, Saskatoon was not even incorporated as a village, there appears to be ample justification for the claim. Certainly it is the youngest born of the more important Western Canadian cities and already ranks third in all respects among the civic centres of Saskatchewan.

One factor, solely, has been responsible for this phenomenal development—the agricultural production which has followed upon the settlement of the land about it. Saskatoon is pre-eminently the wheat city. It is the centre of the famous wheat growing area of Central Saskatchewan which for so many years captured the world championship for this cereal. The city became the base for the settlement of this large area and developed into its logical marketing centre. The greatest tribute paid to its peculiar productive capabilities was its selection as the site of the huge Dominion Government Interior Storage Elevator and for two of the largest milling concerns in the west, with a combined output of 2,225 barrels per day.

Saskatoon has a twofold economic importance, first as a distributing centre by virtue of an unique position as the hub of a large rich district, served in all directions by railways, and second in the milling of the cereals this district produces. In the first regard its importance is bound to enhance with the further development of Southern Saskatchewan, for it is the point of focus for three transcontinental lines and for a number of branch lines. In the second regard it must be remembered that Saskatoon is approximately in the centre of a province which produces more than fifty per cent of the total Dominion wheat crop and is annually increasing its output. Its central geographical position gives it freight control of 47,000 square miles of distributing territory embracing over 200 points and 2,225 miles of railway.

Developing as an Industrial Centre

Saskatoon is, at the same time, developing in a sound and healthy manner as an industrial centre. This can be gauged from the fact that its production in 1919 was \$10,812,765 as compared with \$6,587,632 two years previously. In addition to its milling operations and the distribution of wholesale houses, there are brick plants, cement works, cold storage, aerated waters, metal shingles and sidings, machine shops and foundries. In the year 1919 a total of \$7,069,793 was invested in Saskatoon industry and 1,649 persons found employment there,

receiving salaries and wages to the extent of \$1,882,307.

As a residential city Saskatoon offers excellent facilities and advantages. It is, in its way, a capital city, reigning supreme over an extensive area which looks to it for touch and communication with other capitals and commercial and agricultural centres. It is the seat of the provincial university, an agricultural college and experimental farm, and has many other fine educational establishments.

A Dominion's Lands office likewise serves the area for the filing of government lands yet available. There are eleven banks, seventeen churches and many other fine public buildings in the erection of which the beauty and utility of the city has been considered.

If past growth is to be taken as any indication of future progress, Saskatoon is due for great development. A mere village in 1903, with a population barely reaching one hundred, it had grown by 1914 to a flourishing city of over 20,000 people. At present the population is estimated at about 30,000 and it is still growing. As settlement and production increases in Central Saskatchewan, Saskatoon must inevitably attain greater proportions and loftier heights of national importance from both its distinctive lines of development. It will be called upon to furnish the more voluminous and extensive needs of the growing agricultural population and to receive an increasing volume of produce for milling locally or for shipment over the many lines centring in it.

Canada and Empire Settlement

The Empire Settlement Bill has passed the British House of Commons without division, making available three million pounds sterling of the money of the taxpayers of Great Britain, annually for fifteen years, for schemes of settlement in the overseas Dominions of the British Empire. The bill aims at the close co-operation of the Imperial and overseas Dominions in evolving schemes which will be to the best mutual interests of the settlers and the Dominions concerned, but leaves those Dominions, as being most vitally interested, practically a free hand in the matter of actual settlement. The ultimate success of the general project, as far as Canada is concerned, lies in the manner in which the Dominion will exert herself to take advantage of the measure and develop the best arrangements to receive and locate settlers.

The scheme is designed to work to the greatest benefit of both the Motherland and the Dominions of the Empire and should accomplish what each has been attempting individually to achieve since the conclusion of the war. It is calculated to effect a considerable amelioration in the acute unemployment situation of the British Isles whilst giving to the Dominions emigrants of good British stock which certain of them have felt constrained to refuse in their own unsatisfactory economic conditions.

The war brought to the point of culmination the urgent need of a redistribution of the population of the British Empire, for the return of the armies resulted in an overstocked British Isles. Normal emigration to the Dominions during the war period would have been over two millions; actual emigration was less than one-sixth of this total. Even allowing for nearly 750,000 who fell in the war, there was an excess of one million over the normal increase of population for the period. To accentuate the

acuteness of the situation, the country was plunged into an economic maelstrom with an inability to find work for even the normal population; and where relief might have been found, certain of the Dominions, undergoing their own trials in the period, were disinclined to burden themselves with men to whom they could give no positive assurance of regular employment.

Many would Come to Canada

Whilst Canada has looked upon her millions of acres of virgin agricultural land that lacked the men to turn the sod, England has been paying out an annual sum in excess of \$500,000,000 to unemployed without effecting any material relief of a permanent nature. These unemployed, it must be realized, are not in this condition through any fault of their own; they are the sport of circumstances, an excess of population in a period of serious economic stress. Many, could they do so, and the Dominion were willing to accept them, would come to Canada. Canada has been eager to welcome them, but able to absorb only those with sufficient funds to establish themselves and give a guarantee against possible destitution.

Keenly alive to the benefits of assisted and state-aided immigration, Canada has been largely held back by financial stringency, although after an expenditure of \$166,000,000 in re-establishing her own soldiers, she co-operated up to a certain extent in settling on Canadian lands numbers of Imperial veterans. In this existing state of things the natural line to follow was that of using a large part of the money spent in unemployment doles in effecting a permanent redress of the situation by establishing men in places where they would work out their own prosperity and were at the same time a national need.

Scheme Opens Great Possibilities

In the preliminary conference between the British and overseas governments, it was the general understanding that of the sum available about one-half should be devoted to assisted passages and other forms of actual migration, this to be by way of a loan and not a free grant, the cost to be borne equally between the British government and the Dominion concerned. The other half was to be devoted to advances to settlers on the land, reckoned at a maximum of \$1,500 per settler, made by the overseas government. In all probability it is on these bases that the various Dominions will develop their settlement schemes.

The scheme opens up great possibilities for Canadian colonization provided that the Dominion goes energetically into the matter of developing schemes to extract the greatest benefit from the elaborate project. It is an understood thing between the Imperial and overseas governments that settlement on the land is the key to the whole problem as well as meeting the sole and outstanding need of the Empire outside the Motherland. The bill removes all the objections Canada has had since the war to a large volume of British immigration as not having the necessary funds for immediate settlement and rapid producing.

And Canada need have no fear in this scheme of losing out to other Dominions of the Empire. Canada, in the years before the war, received more immigrants from the British Isles than all other Dominions combined, and in the settlement of Imperial veterans Canada was found to be overwhelmingly favorite in the matter of choice of new homes. The big thing has been done in providing the necessary funds for financing the schemes. It but remains for Canada to arrange to extract a full measure of benefit

Italians in Canada

A new phase in Canadian immigration, which may swell into important proportions, opened up with the arrival in Quebec of the Canadian Pacific steamship Caserta, operating on the new run of the company between that port and Genoa and Naples, which brought to Canada

the season's first party of Italian immigrants, 725 new colonists in all, described as the finest aggregate of the people of this race which has come to settle in the Dominion. The larger number were single men, though there were some married couples and a few girls and children, all uniformly healthy, of fine physique, and of exceptional education. All were in possession of funds in excess of the immigration requirements, many could speak English fluently, and sixty per cent were conversant with French. Whilst many of the men were bound for the mining districts about North Bay and Timmins, in Northern Manitoba, and British Columbia, several families of the Italian farming class, with substantial funds, were bound for the Prairie Provinces, where it was their intention to purchase farms.

The operation of a steamship line between Canada and Italy was arranged for shortly after the coming into effect of the new United States immigration regulations which restricted the influx of the people of Italy in common with that from other countries, no doubt under the conviction that the tide turned away from the United States, would, partially at least, find its way to Canada. Events since that time have transpired to encourage this belief. The disturbed conditions in Europe and the dismal prospects of complete readjustment for some time have, according to report, turned the minds of the better class of Italian farmer towards the American continent, and the operation of a direct line to Canada followed by an active campaign of propaganda which has made Canada and Canadian opportunity better known, is, in all probability, going to send a considerable tide to these shores. A valuable advertising agent too has been the contented and prosperous Italian in Canada, who, in many cases, returning to his native country, has brought back his family and induced others to follow his example.

A Valuable Industrial Worker

The Italian immigrant in Canada, as in the United States, has been in the main an industrial worker. He is to be found doing the heavy outdoor labor of the streets of the cities, in the construction of railroads, in the rougher work connected with the erection of great buildings. He has proved, too, a valuable toiler in Canada's many mining districts. In Nova Scotia large numbers are employed by the British Empire Steel Corporation and are said to be among the most reliable of employees. As a rule ignorance of English and a natural clannishness drive Italians into bands; working gangs are often solely composed of the men of that country, who live together in the larger centres, and in farm settlement form colonies of their countrymen.

The great industrial expansion of Canada within the past twenty years and the consequent

demand for laborers, has induced a great movement of Italian workers to the Dominion since the beginning of the present century. In the past thirty years approximately 145,000 Italian immigrants have entered Canada. During the first decade of the century 55,500 entered the country and in the last decade of the previous century probably 20,000, so that approximately 75,000 Italians had been added to Canada's population in the twenty years prior to 1911. It is rather disappointing, therefore, to note that the census of 1911 returned only 34,739 Italians as resident in Canada. Allowance must of course be made for a seepage towards fellow-countrymen in the United States, for inevitable inaccuracies in recording nationalities in the census, and also for the fact that the casual, changing work so many immigrant Italians follow, makes their inclusion in the statistics sometimes difficult of ensuring.

Thriving Agricultural Colony in Alberta

However, granting the 1911 statistics as being more or less accurate, growth of Canada's Italian population in the ensuing ten years has been fairly healthy, the estimate made by the Italian Consulate General being 48,000 at the present time. And here must also be taken into account the war period, in which immigration not only dropped to a minimum but many Italians resident in Canada returned to their native country.

The tendency is undoubtedly for Canada's Italian population to stabilize itself, and whilst there must always be a certain amount of movement among mine workers and laborers, some being lost to the country in the fluctuation of industrial and economic conditions, the fact that many Italians are going on the land is the best evidence that the people are letting their roots down in Canada and losing that tendency of the alien Italian to continually look back at the country he has left behind. There are many prosperous Italian farmers in the western provinces, the colony of Venice, on the shores of Lake La Biche, in Northern Alberta, settled in 1914, being an outstanding example of successful achievement in pioneering effort.

The Italians, particularly the inhabitants of Lombardy and Northern Italy, are fine agriculturists, and there would seem to be authentic evidence that the eyes of many of these, with sufficient capital for comfortable establishment, are being drawn, in the stress of European conditions, to Canada and its agricultural opportunity. The Royal Italian Commissioner for Immigration, investigating conditions in this country, on the announcement of the inauguration of a direct Canadian steamship service to Italy, prophesied boatloads of good Italian immigrants landing once more in Canada, and the arrival of the first consignment would seem to bear out the accuracy of his vision.

New Colonization Area

The agricultural population of Quebec province is staple; it is more than this, for the rural population of Quebec shows a steady rise. In the trend evidenced in many of the older farming areas to desert the profession of farming and leave the land for the cities and industrial centres, it is gratifying to note that there is no such movement at work in Quebec, that the province's agricultural population successfully resists the lure of urban life and remains satisfied and undisturbed upon the lands their forefathers tilled. There exists, with an inherent love of the native soil, a deep realization and conviction of that security which lies in the land, and consequently the sons of farmers largely remain farmers and the agricultural followers of Quebec never dwindle.

Gratifying as this situation is, it is apt to present difficulties. The process of subdividing land among sons cannot go on indefinitely if the subsections are to remain of sufficient dimensions to ensure their tillers competent returns. That this system still obtains merely from the desire families have to remain together is evident from the fact that whilst the total land area of the province of Quebec is 218,723,687 acres, there are only 24,571,330 acres occupied, of which 12,095,120 acres are improved. These figures suggest at once the latitude there is for expansion and the opportunities existing for those already settled within the province as well as for new settlers and repatriated French-Canadians.

Forty Thousand Miles of Road

The Quebec government has of late been making vigorous efforts to colonize its vacant lands, to move the young men from the older lands instead of continuing the subdivision of farms, and inducing fresh immigration of an agricultural nature. Forty thousand miles of roads have been built in the province at a cost of \$55,000,000, and the program of the present year calls for a further expenditure of \$7,500,000. The fine condition of these roads may be gathered from the fact that they sustain the travel of 54,000 provincially owned cars as well as countless thousands brought up each summer by tourists. Though these highways cover the entire province, many are colonization roads built into the northern areas of the province, penetrating new agricultural districts and opening up new farming tracts to settlers.

This summer a particularly choice new section of Quebec province is being opened up by the extension to Les Quinze of the line of the Canadian Pacific Railway running from Mattawa to Kipawa. This line passes along beautiful Lake Temiskaming, not far from the Ontario boundary, piercing Temiskaming county with its twelve municipalities and twelve towns and villages, with such settled communities as Ville Marie, St. Placide and Lorraineville. The farming area is an old established one, with a population of 10,500 which has been successfully farming for years, taking its produce across the lake and exporting it by way of the Canadian Pacific main line.

A Splendid Settlement Opportunity

In the district so penetrated there are 216,216 acres of good arable land, of which only 78,603 are in pasture and 63,919 under tillage. The balance of 73,694 is at present unproductive and available for settlement. The land is of excellent fertility, as has been proven by the high degree of production, and is similar to that which has produced the famed agricultural districts of Northern Ontario on the other side of the boundary. Cheese, eggs, dressed meats, livestock and hay have for years been sent in quantities from this district to Ontario points. Many cars of livestock are annually shipped to the Montreal market. Hay exports amount to about 12,000 tons per year and peas to 200 tons. Wheat, oats and barley are successfully grown and exported.

The opening of this new area to finer and more adequate railway communication affords unique opportunity for Quebec land settlement either on the part of French-

Canadians from other districts or newcomers from other lands. The land is consistently a good clay loam, perhaps particularly suited to dairying and kindred activities. Open spaces occur among light timber and brush. For the convenience of settlers twelve sawmills are operating in the district, whilst there is a market for small supplies of pulpwood at local plants.

All the pioneering in this district has been effected, and the newcomer makes his home in an established community with social life developed, good roads built, the fertility of the land proven and markets developed. The introduction of the railroad, which other settlers have had to wait years to see, gives him instant touch with his markets and direct communication with the Canadian Pacific main line in the south. Nowhere can he get far away from Lake Temiskaming with its conveniences and beauties. It is a unique settlement opportunity.

Brighter Immigration Prospects

In the early months of the summer, Canada is experiencing a pronounced revival in immigration and there is ample evidence that the period of drastic restriction and positive discouragement has not killed interest in Canada and that faith in the Dominion as a bourne of new hope is as buoyant as ever. Canada is facing better immigration prospects than she has for some little time. The opening of the doors a little wider has but disclosed the dammed-up state of the stream which, given freer release, is pouring in fuller force over the Dominion. Immigration, however, cannot be so exactly regulated, and the exodus of immigrants is the culmination of months of consideration, so that the full effects of the recent immigration concessions will not be experienced for some time, in all probability not before the spring of 1923.

The lowering of the barriers has had a further-reaching effect than the entry into the country of many formerly debarred by reasons of financial stringency. It has had a moral effect. The restriction was rightly regarded as an indication of Canada's internal economic condition, and many persons and families of comfortable means contemplating Canadian settlement were discouraged from doing so. In the removal is seen the first blush of the dawn of better days, and consequently many of those arriving are in a condition to establish rapidly and securely.

The high desirability of those entering Canada at the present time is indeed pronounced. The concessions to popular demand for a wider door to immigrants did not include any lowering of the standard demanded, and those coming into the country are subject to the same requirements which have prevailed for years. Canada has successfully impressed on those countries from which she draws her people, that her prime and crying need is for those who will go on the land, and of those entering the country the bulk is composed of agriculturists or intending agriculturists. There is a substantial proportion of domestic servants and of classes of labor whose services are required at the moment.

Many Countries Contributing

Every country which has formerly contributed to Canada's population has resumed its mission to these shores. Immigration for the first quarter of the year was about fifty per cent from across the international border, and prospects are that many more United States farmers will come up to Canada during the course of the summer and fall. British immigration is of a healthy and desirable order, of sturdy composition, and frequently heavily capitalized. Many Scottish farmers have already arrived this year, and in addition to the personally conducted parties of intending farmers from England there have been valuable parties of skilled crofters from the Hebrides. Some members of the demobilized Royal Irish Constabulary, aided by the Imperial government, have already arrived and settled in Canada and others are to come before the end of the year. At present Canadian agents are in India with expectations of inducing demobilized Imperial army officers in that country to invest their gratuities and compensations in British Columbia lands. Mention should also be made of the splendid work which is being performed by the Salvation Army in bringing out parties of domestics and ex-service men from the British Isles, assisting them in procuring passage, and finding them positions on arrival.

Though Canadian immigration falls broadly into the two classes, British and American, many European peoples have contributed in a large measure to the agricultural development of the Western provinces, and it is gratifying to note the same healthy interest in Canada evinced by the most desirable of these. The personally conducted land party has proved an excellent colonization method in the case of people from the British Isles intending settling on Canadian lands and unacquainted with conditions, and this has been extended to other peoples, and sturdy bands of citizens from Holland, Norway and Denmark have been conducted under expert guidance from their old homes to Canadian farms.

An Awakening of Interest

The operation of a direct steamship service from Italy to Canada bears prospect of a substantial volume of immigrants from that source, which the first vessels to arrive tend to further substantiate. The operation of a similar direct line to Norway will doubtless have similar results. Vessels running from the continent of Europe within the past month have borne freight of Serbians, Poles, Swiss, Roumanians, Dutch, Jugo-Slavs, French, Danish, Norwegians, Swedes, Finns and Lithuanians. All have constituted fine, desirable citizen-building material, as the few detentions and lesser deportations bear testimony. Furthermore the disturbed industrial conditions of the New England states have

resulted in the commencement of an exodus of French-Canadian families back to their old homes, which may reach a more appreciable size.

On all sides this awakening of interest is evident. It is a new faith borne on the crest of the wave of brighter prospects, the dawn of a fuller realization, in the continued inability of many other countries to emerge from the economic slough into which the war plunged them, of the desirability of Canada as country more rapidly throwing off its post-bellum depression, and its great place in the world's immediate future.

New Legislation Effecting Oil Leases

In the widespread interest directed towards oil exploration in the Canadian North-West, where actual drilling is taking place this summer from Bear Island, near Fort Norman, in the North-West Territories, to the Sweet Grass Hills, just north of the Montana border, a stretch of something like a thousand miles, interest attaches to amendments to existing regulations affecting leases and drilling operations, and companies contemplating entering the field should make themselves acquainted with new legislation which has been promulgated at Ottawa.

Legislation enacted in February 1921 to cover oil and gas permits in the North-West Territories provided for a rental of fifty cents an acre for the first year of the term of the permit and one dollar per acre per annum for subsequent years. Should oil in commercial quantities be discovered on the location to the satisfaction of the government, the permit terminated and the permittee became entitled to receive a lease of one-fourth of the area described in his permit, selected in a square block. The permittee was required within two years from the date of the permit to have a substantial and adequate drilling outfit on his location. In the failure of erecting such, his permit expired upon notification.

Changes of a Drastic Nature

As a result of representations made to the government of various hardships and injustices effected under certain circumstances in the conditions prevailing in the North-West, changes of a drastic nature have been brought about. The term of the permit is extended from four to six years. The rental for the first year of the location applied for shall accompany the application filed in the office of the mining recorder. The span within which it is required to have a drilling outfit erected is extended from two to four years. The rental for the second, third and fourth years is at the rate of a dollar per acre per annum, but provision is made that if satisfactory evidence is furnished that drilling operations have been commenced in any year before the termination of the fourth year, the amount expended in such boring operations, exclusive of the cost of machinery and casing, may be deducted from the rental due that year.

At the termination of the fifth year the permittee shall furnish the mining recorder with evidence that he has drilled one or more wells to a depth of at least five hundred feet each or has expended in actual drilling operations the sum of not less than \$5,000 exclusive of the cost of machinery and casing. If oil in commercial quantity has not been discovered the permittee shall, during the sixth year, continue his operations and shall drill one or more wells to an aggregate depth of not less than two thousand feet. If at the conclusion of the sixth year oil has not been discovered, the permit shall absolutely lapse without any declaration of cancellation or forfeiture on the part of the crown.

If oil in commercial quantity is discovered the permit shall terminate and the permittee shall be entitled to receive a lease. To do this he shall stake out a rectangular block the length of which shall not exceed twice the breadth, containing not more than one-half of the area described in the permit. It is further provided that in view of the remoteness of the Territories and the limited character of transportation facilities available, the maximum area which may be included in a group is increased to 20,000 acres.

Applications for leases will be dealt with under the regulations which were in force at the time such applications were made.

Under certain conditions it is provided that an extension of lease not exceeding four years will be granted where the lessee can prove that he has incurred substantial expenditures in an effort to comply with the regulations.

Oil Exploration in Western Canada

*By A. M. McQueen, Vice-President
Imperial Oil Co.*

When your Chairman, to whom it is difficult to refuse anything, proposed that a description of the recent exploration for oil in Canada might be of interest to this gathering I gladly acquiesced, and nominated the chief of our Engineering Department, who I ventured to think might prepare a paper of such scientific and technical value as would be worthy of the time that you would devote to it. Your Chairman, however, rather terrified me by declaring that what was wanted was the reverse of a scientific and technical treatise, and to prove that he meant what he said he insisted that I make whatever address was to be made, and that I endeavor to portray as faithfully as possible the processes of an exploration campaign after the reports of the geologists have been laid upon the directors' table in the office of an oil corporation.

In making an attempt to obey these instructions I may seem to over-emphasize our own operations, and I may perhaps explain to those not familiar with the Canadian situation that the company with which I am connected—Imperial Oil, Limited—is making the first comprehensive test of the oil resources of Canada and is, of the world companies, the only one carrying on operations here. Therefore, these operations may be said to be representative of all the conditions existing; but to say this is to belittle neither the courage nor the accomplishments of many small companies which have assisted in the pioneer work, and which, it is my earnest hope, will some day participate in the favorable result, and favorable result I confidently believe there will be.

Work of Geological Survey

The best geological information which could be previously obtained upon the petroleum possibilities of Western Canada was, to say the least, non-committal. It is no deprecation of the Dominion Geological Survey to state that, while the results of the researches of this branch of the government were thorough as to the localities to which they applied, they were, in the bulk, most fragmentary. One small corner of any one of the four great western provinces would have been sufficient to keep the entire government force busy for a decade, and then the knowledge gained would not have been complete, so that it was upon, to some extent, virgin territory that the reconnaissance of the geological department of Imperial Oil, Limited, was undertaken between 1916 and 1919.

There were, except in the far north and the extreme west, but few exposures from which to work, so that a great deal of the deduction must necessarily be hypothetical. There had been, it is true, effervescences of enthusiasm which manifested themselves in the form of oil booms, and with these some drilling; but most of the work has been but indifferently performed, and more than indifferently guided, and the records were of small value. Outside the excellent basis for geological examination provided by Dr. D. B. Dowling and other officers of the Geological Survey, it was in many respects a new field.

Chronologically, therefore, the first move was the accumulation of geological data, and while, as I have intimated, this research, as it progressed, produced no very definite encouragement, there existed a situation which caused the directors of Imperial Oil to expect what might be termed longer chances in taking action upon the geological information furnished them than would have been their policy if their attitude had been governed entirely and absolutely by commercial considerations. The war had demonstrated the vital importance to a nation of petroleum resources. Although, through the fine spirit, and enthusiastic support of the cause of the allies, which was manifested by the great American oil companies, this country received during the war period an unstinted supply of petroleum, while in the countries of its origin petroleum was being rationed, the fact remained that Canada produced but 2 per cent of her annual consumption of petroleum. It almost seemed that the great oil fields of North America stopped just south of the International boundary.

The Imperial Oil Co.

As the largest of the Canadian oil companies, moral responsibility lay upon Imperial Oil, Limited, to conduct a careful search for the natural resource of which the country stood so greatly in need, and therefore our directors upon the reports of their geologists considered the risk of the expenditure of many million dollars in the search for oil as much from the national as from a profit-making corporation standpoint. Although petroleum could be profitably imported from the United States, Mexico, or South America, it was apparent that the potential oil supply of the North American continent was diminishing at a rapid rate, and that therefore the search in the land of the 'Midnight Sun' was not a wild chimera or an impracticable dream, but the natural evolution of an imperative necessity.

If the wheels of industry were to revolve, there must be more oil, and to find oil the explorer must go to where the oil was—even though that locality be assumed to be beneath the Arctic lights.

In brief, this is the explanation and the justification for the string of drilling rigs scattered across a territory two thousand miles from the Canadian boundary to the frozen ocean, and from the foothills of the Rockies to the crystalline rocks that border the eastern zone of the Cretaceous laid down in the pre-historic bed of Agassiz Lake.

Drilling in Several Fields

As an outcome of the geological reconnaissance, several potential fields were fixed upon and drilling commenced. In the farthest north, one possibility was located near Fort Norman, at a point where oil seeps had been noted by Sir Alexander Mackenzie, the first white man to visit the country, nearly a century and a half since. A rig was shipped to this point over a rail and water route of nearly fifteen hundred miles beyond Edmonton, and a drilling party was sent in to spend the winter in the highest latitude in which oil exploration has ever been undertaken. This party arrived on the ground, after many difficulties and mishaps, in time to get the derrick erected and the plant installed late in the autumn of 1919, and stayed in the north all through the winter, ready to make an early start in the spring.

Between the farthest north and the so-called civilization at Peace River Crossing, another drill was installed at Windy point on Great Slave lake. This vast water body is fringed on the west with a dolomite country, which is prodigal in promise of oil, but owing to natural conditions, is very difficult for the explorer, and more difficult for the transportation of plant except along the very shores of the lake. A selection was made, however, at a point which was chosen as much on account of its accessibility as of its promise, and here the rig was placed on the ground in the summer of 1919, ready for the next year's operations.

Route from Peace River Crossing

From Peace River Crossing, the end of steel, the route to these northern locations is by water for fifteen hundred miles. Two different portages, one at Vermillion chutes, on the Peace, and the second at Fort Smith, on the Mackenzie, constitute very serious handicaps to travel, and the ice reduces the navigation season to about one hundred or one hundred and ten days. The Peace river is a placid stream, except for the break at the chutes, where a volume of water a mile and a half wide and a hundred feet deep falls over a fourteen-foot limestone ledge: giving promise of almost immeasurable power to the future generation which will develop its possibilities, but effectually barring the possibility of continuous navigation for the present. The portage here is about four miles, and unbelievably difficult. The Peace rises in the inter-mountain country to the west of the Rockies, is the real headwaters of the Mackenzie system, and is the greatest river on the continent to cut its way through the continental divide.

The milder climate in the country around its headwaters beyond the range guarantees an early break-up, and this river is usually open about May 1st. For its whole length below the mountains it traverses a rich alluvial plain which will some day become one of the great granaries of the world. In the lower stretches it is sluggish, and where it converges with the Slave river it skirts the Buffalo plains, a fertile northern park country of great agricultural possibilities, where a herd of possibly a thousand buffalo, constituting the last uncaptured remnant of the shaggy millions, graze in peace under the jealous protection of the Mounted Police.

Down the Slave river, the course is rocky and shallow in places, until at Fitzgerald comes the second break in navigation, the Smith rapids. Here there is a sixteen-mile haul, and the problem of getting a drilling outfit, together with the casing, commissary scows, and camp equipment, over the indifferent trail has been a problem in transportation which has taxed all the resources of our western organization.

Down The Slave River

To Slave lake the route down the Slave river presents no great obstacles to the experienced river man, but at the lake there is always a wait for the ice, which does not go out of the river until the latter end of June.

Slave lake is a magnificent body of water, nearly three hundred miles in its greatest length and eighty miles across at the point where it has to be traversed en route north. It is clear and cold, and rich in resources of fish. Its eastern stretches lie in the igneous rocks; they are characterized by bluff and rugged shores, and thousands of little islands that all look alike, and they hold some possibilities of mineral wealth. The westerly arm of the lake is in the Devonian; it is shallow, with low shores, and is subject to summer squalls of unbelievable suddenness and violence.

At the outlet, Slave lake is a fan dotted with islands. The best draft at low water is four and one-half feet. Some very comfortable steamers navigate the lower stretch from Smith to the Arctic, and it is usually considered that when Mackenzie river proper has been reached the real difficulties of the voyage are over; although, as a matter of fact, it is not safe for any but skilled river men to attempt the trip.

As for the possibilities of the field, the question is one which can be answered only by the continued application of the drill, and four drills will be operating in the north for our company next summer.

The results to date, (December 1921,) are entirely inconclusive. No news as to progress of operations can be expected by us until the spring or early summer of 1922, except the possibility of one mail which may come out by dog team through the winter. We confidently expect that these four wells will be drilled to the desired depth in the coming season, and they should demonstrate to a great extent the existence or non-existence of a commercial oil field in that locality. The expenditure in this district has been and will be very heavy.

To Demonstrate if a Reservoir Exists

The company recognizes, however, that all that can be accomplished as a result of this heavy expenditure is simply to demonstrate whether or not there exists in that country a reservoir of oil which may become available many years hence, when oil is much scarcer and its price much higher than to-day; for it is obvious that to make oil from this field accessible to the world's market would necessitate the outlay of many millions of dollars to cover the cost of constructing a pipe line to tide water. Incidentally, the establishment of such transportation facilities would lead to the opening up of a country two thousand miles long, with resources in timber possibilities and in minerals, and with a wealth of fishing ground and agricultural areas which, together with the oil industry, would sustain a large population and extend the map of organized Canada far to the north as well as east and west.

In addition to drilling and camp equipment, commissariat, river craft, and all the necessities for the maintenance of life in the Arctic latitudes, the administrators of these northern expeditions acquired two all-steel monoplanes of the most modern design, of powerful lifting capacity and of great speed. The purpose of these monoplanes was the mapping of geological structures, the rapid conveyance of operators, and the locating of any areas which might be proven by the drilling operations. As in many other aspects of our venture in the northern latitudes, the operation of these monoplanes necessitated the establishment of many precedents. It was impossible, for instance, to send men ahead of the 'planes to prepare landing places, and so the wheels were removed from the machines and pontoons prepared for landing on the broad waters of the northern rivers, and skis for landing when these waters were frozen over.

Operations on Prairie and Foothills

I will not attempt to describe our activities at each individual location, but will illustrate the operations on the prairie and foothills areas by relating the experience at one location, the Czar well. Our several locations are proving a very large area, being situated at widely divergent points, extending from the Montana boundary to the Arctic Circle. In addition to the Fort Norman operations, there are three locations in western and southern Saskatchewan, four in eastern and central Alberta, four in the foothills of the Rockies south of Calgary, one in the foothills west of Edmonton and one at Pouce Coupe south of the Peace river, on the boundary between Alberta and British Columbia.

By October 1st of last year our drilling department had accounted for approximately five miles of test hole. Of this total, 13,584 feet were drilled during the nine months of the 1921 season.

The nature of the formations in the prairies and the foothills is such as to render drilling in that territory as difficult as any in the world. This necessitates starting with a sufficiently large hole to permit the use of 20 in. heavy casing. When this is carried as far as possible a smaller size is inserted, which in turn is followed by still smaller casing, and so on until the hole is usually finished up at a depth of from three to four thousand feet with 6 in. casing. Owing to the fact that the country rock is largely soft shale, it is necessary to carry the pipe with the drill, as in very rare instances only is it possible to drill with an open hole without the caving shales sticking to the tools. In one instance we had a fishing job at 2,860 feet, which lasted for eight months and was finally abandoned.

Despite the amount of capital which has been invested and the successful solution of the many engineering and drilling problems which have been encountered the company has not been so fortunate, up to the present time, as to develop a commercial production of crude oil. In the Fort Norman No. 1 well we obtained a small production, which only demonstrates the fact that oil exists in that region. Under more favorable conditions, at some other location in that territory, we hope to obtain a larger production, but time only can justify this prophecy.

In summing up our experience, I can only say that we are disappointed but not discouraged; and we are going on in the hope that we may some day feel that we have contributed to making Canada independent in its resources of a commodity of vital importance.

Inland Fisheries of the North-West

The inland fisheries of the Canadian Prairie Provinces and the Yukon accounted in 1921 for a catch valued at \$1,713,827. Of this total the province of Manitoba was responsible for \$1,032,963; Alberta for \$408,868; Saskatchewan \$243,018; and the Yukon \$28,978. Almost the entire catch was made up of whitefish, which alone had a market value of \$1,011,829. The value of the inland fisheries of the Western Provinces shows a decrease of \$394,430, or eighteen per cent when compared with that of the previous year, which is, however, explained in the sharp decline in prices which the year witnessed. Uniformly the inland fisheries experienced a very prosperous year and substantial progress was made in many phases of what is largely a new Canadian commercial enterprise.

In Manitoba there are 19,894 square miles of inland lakes; in Saskatchewan 8,329 square miles; in Alberta 2,360 square miles; and in the Yukon and North-West Territories 629 square miles. The total of 31,232 square miles of water has, from the beginning of time, been a resource of tremendous potential value in its content of whitefish, pickerel, pike, salmon, trout, and other fish, which, though they have only of recent years come under commercial exploitation, have had a long and important local value. Whitefish has always figured in the records of the Canadian North-West as a reliable food supply in summer and winter and it has played its part in the fur trade. Whitefish was the food of the hunter, trader, and trapper in the Northern wilds, as well as that of their dog teams. When supplies have been wrecked in the hazardous methods of transport in those regions, existence would have been precarious save for the sustenance provided by the prolific waters.

Systematic Commercialization

In recent years, however, a systematic commercialization of the great lakes has been undertaken with the most gratifying results. In a surprisingly short space of time fishing enterprises, on well organized bases, have been established on many of the northern lakes to take their toll of the waters. Collecting stations and chilling rooms are located at points on the expansive bodies and motor launches utilized to connect them and gather the daily catch in central points for further transport. Fishing is carried on summer and winter, though the great part of the annual catch is taken before the ice covers the waters. Transport to the nearest railway point is effected by wagons, and in the winter by means of sleighs over the ice.

Operations on many of these lakes are on no mean scale and considerable capital, amounting to nearly three-quarters of a million dollars, is invested in boats, gear, ice-houses, fish-sheds, and wharves. At the last return of the fishing fleet of the Prairie Provinces, there were 11 steam tugs, 81 gasoline boats and 1,905 sail boats and skiffs engaged on the inland waters of the three provinces. The catch on Buffalo Lake alone, in Northern Alberta, for one winter, by about a hundred men, exceeds half a million pounds. That on Lake La Biche is about the same, whilst that of Lesser Slave Lake totals three times this amount. The catch of Lakes Manitoba, Winnipeg, and Winnipegosis in Manitoba aggregates about two million pounds for the season.

Now Vieing with Sea Catch

The great favor with which the product of the western lakes has been received and the rapidity with which markets have been developed over an extensive area has been truly remarkable. This is now vieing with the sea fish catch of both coasts not only in the Canadian interior and eastern areas but in the American markets. A

voluminous demand for Alberta, Saskatchewan and Manitoba fish has been created in New York and Chicago and finds its way into the households of a hundred other middle western and eastern cities. The traffic is growing in volume from season to season as the high quality of the product does its own advertising, and a valuable export business is being built up which promises to reach important proportions.

All the waters of the North-West teem with a wide variety of fish, and such exploitation as has been effected on these waters, even in the absence of the rigorous protective measures which are in force, would scarcely bring about any noticeable depletion, in view of the almost limitless resources. With the world's most extensive and prolific sea fisheries off her coasts, the annual toll of which is also merely a minute portion of what might be taken, Canada takes second place to no country in her fishery resources. They constitute one of her potentially richest assets which would go a long way towards feeding the world. Increase of population, further commercial exploitation and the development of markets, will steadily bring about a more adequate annual toll and production.

Maritime Forest Products Industries

More than seventy per cent of the area of the province of New Brunswick is forest land, or roughly about thirty-two acres of timber for every person in the province. Crown forest lands comprise 7,500,000 acres, or more than half the forest area of the province, whilst it is estimated that 4,500,000 acres are owned by large companies. Forests of farmers' woodlots and of small owners aggregate about a million acres. So far it has not been possible to arrive at even an approximate estimate of the extent of standing timber. A considerable portion of the province of Nova Scotia is most suited for forest growth, the timbered area being estimated at 7,812 square miles. There are no real forests in Prince Edward Island, timber occurring only in small isolated stands, many of which are merely farmers' lots, and the material is sawn almost entirely by small neighborhood or customs mills.

With these rich forest resources it can readily be imagined that the forest products industries of the Maritime provinces of Canada constitute a most important industrial activity of that area. It is, in fact, the first industry of New Brunswick, the second in Nova Scotia, and the fifth in Prince Edward Island. Taking the three provinces together, a total of nearly forty million dollars is invested in eight hundred plants, of which two hundred and fifty, capitalized at thirty-two million dollars, are in New Brunswick. Over twelve thousand people of the Maritimes are engaged in the various phases of the industry, receiving in wages and salaries the sum of seven million dollars and accounting for a production in excess of thirty-five million dollars.

Many Logging Plants and Sawmills

In the year 1920 there were in New Brunswick 69 plants engaged in logging operations and 224 sawmills working. In the sister province of Nova Scotia there were 117 logging outfits and 476 sawmills. The capital invested in forest operations was, New Brunswick \$44,477,410; Nova Scotia \$789,143; Prince Edward Island \$700. The corresponding capital in mills operations was \$33,437,543; \$8,203,251; and \$187,327. A total of 8,000 employees engaged in sawmill operations received \$6,500,000 in wages and 3,500 engaged in logging were paid \$2,700,000.

In Nova Scotia the most important single item of forest products is ordinary sawn lumber. There are besides pulp, cordwood, railroad ties, barrel staves, pit props, ship timber, box shooks, laths, and shingles. A considerable amount of hardwood is used in the manufacture of furniture, clothes pins, shoe lasts, shoe pegs, etc. The marketing of the provinces' substantial fish and apple crops each year accounts for the consumption of large quantities of barrel staves.

In New Brunswick, whilst sawn lumber still constitutes a very important item in the province's forest products industry, it is being rapidly outstripped by pulp and paper in the value of production. Modern mill machinery has had the effect of centering the manufacture of lumber in large plants mainly at the seaports, as has been the case in other industries, and about seventy-five per cent of the province's lumber is so produced where it can be most conveniently and expeditiously shipped. Upwards of a million railway ties are made each year out of New Brunswick jackpine, cedar, hemlock and tamarac for Canadian railways, whilst several thousand cedar telephone poles from the same source find uses within the Dominion annually.

Prince Edward Island's principal trees are spruce, balsam, fir, birch, hemlock, and white pine, and whilst this little province's cut does not figure largely in the Maritimes' total, hardwoods form about thirteen per cent of the total cut.

Development in Pulp Manufacture

The greatest forest products development which has taken place since the beginning of the century, or more exactly in the past decade, has been in the manufacture of pulp. New Brunswick has now five pulp mills producing sulphate, sulphite, and groundwood pulp. In the last year for which records are available this province produced 89,069 tons of which it exported 82,356 tons valued at \$10,707,313. The total wood used in the year, mainly balsam and fir, amounted to 180,723 cords, worth \$2,553,613. Nearly twenty million dollars was invested in this particular branch of the industry which employed about fifteen hundred men and paid them nearly two million dollars.

In Nova Scotia there are six pulp mills, which in the same year had a production of 23,384 tons, of which the entire amount was exported at a selling price of \$1,067,455. A total of \$1,067,455 was invested in the pulp industry, which gave employment to more than five hundred employees receiving in wages and salaries \$332,795.

The marketing of pulpwood in the Maritimes has meant closer utilization than is possible in sawmill operations, and in higher valuation of timberlands, especially in young growth and the smaller diameters. It has meant increased prosperity for the settler and the farmer and yearly employment for more men at the mills. It has, however, also meant a considerable reduction in the supply of spruce and fir, and in the next few years machinery will in all probability be introduced which will make possible the utilization of other species of wood.

The forest products industries of the Maritimes are first in order of importance in that rich area, and with the tremendous resources at their disposal should for years, and indeed for all time, occupy the important place in Dominion activity they at present hold. To effect this they must be conserved, safeguarded, and intelligently utilized, and these things the provincial governments are ensuring, as far as lies within their power, by continually extending the scope of forest fire precautionary measures, by sane cutting legislation, and by confining the export of raw pulp and unmanufactured timber to that cut upon privately owned lands.

British Capital Coming Back.

There are many signs at the present time whose significance, taken together, would justify Canada in confidently anticipating a speedy return of the times when a large portion of the surplus capital of the British Isles found an investment outlet in Canada. Many conditions are contributing to bring about this desirable state of things, by no means the least of which is the vigorous jump sterling has taken in an attempt to regain a position somewhere near its normal value. Should this suffer no serious relapse, there is every indication that a dominant interest and faith in the Dominion will bring about a considerable expansion of British investment in Canada, for interest is being evinced by investors in methods

of investment and manners of development which previously did not seem to appeal to them.

The situation for some time has been that, strictly, there has been no such thing as surplus British capital, whilst conditions have seriously militated against such crossing the Atlantic in the event of its being available. The situation, as it is developing at the present time, is merely the resumption of an interest, from necessity, long dormant, an awakening to the new dawning of opportunity.

Previous to the outbreak of the Great War, capital invested in Canadian enterprise and development was largely British. Next in order came that of the United States. Conditions of the war and immediate post-war eras worked to the exclusion of British capital and the advantage of that from the United States. At the beginning of 1920 the total American investment in Canada was variously estimated from 1,250,000,000 of dollars to 1,600,000,000, and British capital about double this. The tendency had been to increase American investments in Canada and for British investments to decrease by reason of home demands and the costliness of remitting British funds to Canada under the prevailing exchange rates.

British and U.S. Investment

Speaking in the Federal Legislature towards the middle of the present year, Sir Lomer Gouin stated that England had invested in Canada two and a half billions of dollars and the United States nearly two billions. Thus is evidenced the activity in the movement of capital from across the international line which has prevailed of recent years and which, since the war, has probably been the most pronounced and outstanding feature in the financial and development phases of Canadian existence.

Resumed interest in the Canadian field for investment became evident during the past winter, when promoters of the Northern Manitoba mineral belt and other of Canada's mineral areas met with astonishing success in their endeavors in the British Isles to secure funds for the exploitation and development of those fields. As a result there is much British capital engaged in Canadian mining work this summer, especially in Northern Manitoba, which field was absorbing capital almost exclusively American and Canadian. Since the opening of Spring, English capital has financed a pioneering prospecting venture into Ungava which is to proceed until the fall of the year. A party of British mining experts has formed a basis in the Lake Chibougamau country, operating under the guidance of a Canadian engineer, and will thoroughly explore that country with a view to active development.

Since the beginning of the year the Dominion has been visited by many representatives of British manufacturing and financial interests, at the pinnacle of which came the tour of the party of the Federation of British Industries, anxious to improve trade relations between the Motherland and Canada and more effectively meet United States competition in this country. The wholesale seizure of British trade by American interests in the war years and the subsequent period of trade upheaval in England has opened the eyes of British business men to the opportunities they are letting slip and the serious inroads on trade, at one time purely British, other countries are making.

British Plants to Locate in Canada

England has hitherto failed to adequately meet this competition largely because it did not possess a sufficiently clear comprehension of American and Canadian business methods and did not have the same weapons to

engage in the trade war. For instance, the United States method of attack has been through locating branch factories of the parent American plants on Canadian soil, thus securing all the advantages of a Canadian incorporation. The unqualified success of the first of the concerns to undertake this expansion has resulted in a surprising multiplication. In 1920 there were more than seven hundred branches of United States industries in Canada and many have been added since then, several, in fact, in the present year.

It is apparent that hitherto British manufacturers have not had a deep enough sense of the advisability, indeed necessity, of thus branching out if they are efficiently and effectively going to meet competition. The Department of Trade and Commerce recently undertook an educational campaign with the direct object of forcing British manufacturers to recognize the urgent necessity of locating branches of their activities in Canada if they were to retain their hold on the overseas market, and issued a very handsome, comprehensive, illustrated booklet, "Canada as a Field for British Branch Industries." The campaign would seem to be having the desired effect, for, almost immediately, four British industrial concerns gave definite intimation that they intended location in Canada, whilst many others are reported to be considering it and in correspondence with the Department.

Following this came the announcement that an English motor car concern is to pioneer the movement of British car manufacturing in Canada by establishing a branch in Canada to compete with the American cars now made and sold here. The firm, which manufactures one of the best known English small cars, will build an assembling plant at first, and should this prove successful engage in the complete manufacture. This is a particularly gratifying move, for, though the automobile industry in Canada is one which has of late years exhibited unusual activity and exceptional development, United States firms have been entirely responsible for the energy shown, and this will be the first British rival to compete with them in manufacture.

U.S. Industrial Interest in Canada

There is little doubt but that with the first establishments located successfully the number of plants will swell, as did those from the United States, as British manufacturers come to realize the enormous benefits of manufacturing in Canada and achieve a more even balance between British and American houses prosecuting their activities in the Dominion.

From all indications it is beyond conjecture that voluminous placements of British capital in various phases of Canadian development will take place in the near future, and that the movement will expand with the progress of time and the brightening of conditions. The rise of sterling, the prospect of rosier economic times, the realization of the necessity of meeting competition on the ground of the opponent, are all combining to centre in Canada an interest which wavered merely from force of circumstances.

There is no reason to suppose that United States interest in Canada will ever decline—the tendency would certainly seem to be for this to increase—so that with capital coming, in addition, in substantial amounts from the British Isles and vying with that from across the border, Canada should prosper exceedingly from the business rivalry and experience a period of development surpassing anything she has hitherto known.

Motion Picture Films

A print of each of the following films issued by this department is deposited with the representatives listed on the back page. These are available upon application for use by schools, theatres, clubs, societies, boards of trade, and other associations and organizations.

Homemaking by Irrigation.—Irrigation farming in Southern Alberta, the various operations and their results.

The Land of Promise.—Featuring the well-known agricultural section of Battleford, Saskatchewan.

Opportunity.—Illustrative of Western Canadian opportunity, more specifically in the district of Lloydminster, Alta.

Livestock and Dairying.—The fine status and remarkable progress of this industry in Western Canada picturized.

Taming the Last West.—Depicting the evolution of the Canadian West from buffalo range to a modern agricultural area.

The Sunny Side of Rural Life.—The farmer on holiday, showing that life in Western Canada is not all work.

The Evolution of a Grain of Wheat.—The life of wheat seed from the time it is sown until its progeny enters into the composition of a loaf of bread.

Apple Growing in Evangeline's Land.—Orchard cult in the region Longfellow's poem made famous.

The Apple Harvest of the Okanagan.—Gathering and shipping apples in the beautiful British Columbia valley.

Curing Fish in Nova Scotia.—Depicting the various phases of curing and smoking fish in the Maritimes.

The Canadian Sardine.—The sardine caught, canned and distributed.

Some Water Powers of Eastern Canada.—The beautiful and powerful waterpowers of the Eastern Canadian provinces.

The Silver Fox Industry of Canada.—The domestic ranching of silver foxes in Prince Edward Island.

New Homes Within the Empire.—The camera follows the progress of a British immigrant from the first awakened interest in Canada till when he settles on a Western farm.

Departmental Publications

Any of the following publications will be sent free on request.

The Prairie Provinces of Canada.—A descriptive statistical booklet on the provinces of Alberta, Saskatchewan and Manitoba, with full information on the opportunities for farming in the West.

Business and Industrial Opportunities in Western Canada.—Full listings of industries existing and business openings in the provinces of Western Ontario, Manitoba, Saskatchewan, Alberta and British Columbia.

Why Canada.—Reliable and comprehensive information for the United States manufacturer, showing the advantages of establishing his industry in Canada.

Canada's System of Government.—Canadian government briefly outlined to portray its democratic traits.

The Story of Canadian Nickel.—History of the nickel mining industry.

Canadian Oil Exploitation and Prospects.—An expert engineer's history of Canadian oil development and future possibilities.

Canadian Water Power Development.—Authoritative and exhaustive survey of water power reserves and possible development.

Education in Canada.—The wide scope of Canadian education depicted to show that a settler need have no apprehension in this regard.

A Canadian Grain Handling Plant.—How Canadian grain is stored and shipped. Authoritative article on Canadian elevators.

Bituminous Sands of the Athabasca Region.—Description with known values, and possibilities of development of the widely known tar sands of Northern Alberta.

Water Powers of the Maritimes.—Authoritative article on the undeveloped power systems of the Eastern provinces.

Water Powers of Manitoba.—The water powers of this province dealt with exhaustively.

Oleomargarine.—History of oleomargarine in Canada and its future prospects.

Synopses of Natural Resources.—Pamphlets dealing briefly but concisely with Kaolin or China Clay, Oil Shales, Mica, Fluor-spar, Asbestos, Molybdenum, Magnesite, Fruit, Flax Fibre, Nickel, Coal, Clays, Salt, Copper, Zinc, Silver, Gold, Pyrites, Iron, Potash, Talc, Feldspar, Platinum, Phosphate (apatite) Manganese, Graphite, Cement, Barytes, Gypsum, Petroleum and Natural Gas, Corundum, Sulphates of Sodium and Magnesium, Fur, Fish, Peat, Mineral Waters, Building and Ornamental Stone, Flour Milling and Water Powers.

The Department of Colonization and Development

The Department of Colonization and Development has the following offices established in Canada, the United States, Great Britain and Europe, whose representatives, at any time, will be glad to furnish information regarding Canadian agricultural, industrial and commercial enterprises.

MONTREAL, P.Q.	H. C. P. CRESSWELL, Supt., 335 Windsor St. Station.
WINNIPEG, Man.	J. F. SWEETING, Industrial Agent, Canadian Pacific Railway.
CALGARY, Alta.	M. E. THORNTON, Supt. U.S. Agencies, Ninth Ave. and First St. East.
VANCOUVER, B.C.	E. J. SEMMENS, Travelling Industrial Agent, Canadian Pacific Railway.
NEW YORK, N.Y.	L. F. MOWREY, District Representative, C.P.R. Bldg., Madison Ave. at 44th St.
ST. PAUL, Minn.	J. N. K. MACALISTER, Dist. Representative, Hackney Bldg., 4th and Jackson Sts.
CHICAGO, Ill.	C.P.R. BUREAU OF CANADIAN INFORMATION, 140 South Clark St.
SPOKANE, Wash.	R. C. BOSWORTH, Dist. Representative, 202 Exchange National Bank Bldg.
PORTLAND, Ore.	L. P. THORNTON, Dist. Representative, 208 Railway Exchange Building.
SAN FRANCISCO, Cal.	C. A. VAN SCOY, Dist. Representative, 299 Monadnock Building.
LONDON, England	A. E. MOORE, Mgr., European Organization, 62-65 Charing Cross, S.W.
BRUSSELS, Belgium	CHAS. DE MEY, Director for Brussels Canadian Pacific Railway, 98 Boulevard Adolphe Max.
ROTTERDAM, Holland	WM. VAN TOL, Colonization Manager, 42 Coolsingel.
CHRISTIANIA, Norway	PETER MYRVOLD, Special Agent, 4 Jernbanetorvet.
COPENHAGEN, Denmark	M. B. SORENSON, Colonization Agent, Amagervej. 24.

or any agent of the Canadian Pacific Railway Company or Canadian Pacific Steamships, Ltd. in United States, Great Britain, or Europe.

A. B. CALDER,
ASSISTANT to the COMMISSIONER,

J. S. DENNIS,
CHIEF COMMISSIONER,

Ask the Canadian Pacific about Canada



Agricultural and Industrial Progress in Canada

A monthly review of Agricultural and Industrial progress in Canada, published by the Department of Colonization and Development of the Canadian Pacific Railway at Montreal, Canada.

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MONTREAL

August, 1922

The Business Outlook

AT this season of the year, as each year comes around, the eyes of Canadian business men are focussed on the crop situation. On it depend the loosening of credit, the prosperity of the farmer, the employment of labor, and, in fact, the Dominion's future yearly industrial and commercial activity.

The signs at this writing are for a good crop. The Prairie Provinces have been blessed with heavy, general rains, an almost excessive moisture in the East has assured a bounteous hay crop, while the fruit crops in the Okanagan, Niagara and Annapolis Valleys are reported most promising. Livestock, with ample pasturage, has improved.

That very old and conservative organization, The Hudson Bay Company, is confident of the business outlook, for at the recent annual meeting, Sir Robert Kindersley, the Governor, said:—"Canada's real prosperity has always depended and must

depend upon her crop and the well-being of her agricultural communities. Disturbances of economic conditions due to the war are being adjusted. Recovery is necessarily slow, but there are no grounds to suppose that the recent check to the prosperity of Canada is anything but temporary." He is of the opinion that a good crop—which is in sight—will impart a marked stimulus to trading.

The Canadian pulp and paper industry is not affected by the "emergency" or any other tariff. Owing to the strong demand for its products from the United States, it is resuming much of its old-time activity. During May, for example, 50 per cent of our exports to the Republic were in the form of wood, pulp and paper. It

is understood that American publishing interests, not having received from certain European countries the satisfactory supplies of paper they had expected, have turned again to Canada. Thus it is found that of 78,031 tons of paper imported into the United States in the early spring, 73,119 tons were from Canada; the figures for unbleached sulphate and ground pulp show much the same proportion. Exports of newsprint to all countries for the twelve months ending May were 16,050,000 cwts., or 1,346,000 more cwts. than during the preceding period.

As foreign capitalists are heavily interested in Canadian mining ventures, it will be of interest to know that the Dominion's total gold production to the middle of the present year is \$488,000,000; silver, \$265,292,000; copper

\$270,529,000; nickel, \$173,473,000; lead, \$54,000,000; and zinc \$20,000,000. A total production in these metals of \$1,270,000,000 for a young country the southern fringe only of whose mineral resources has been touched, gives a fair indication of what lies before it.

THE 1921 CENSUS

	Population	Rural	Urban
Prince Edward Island..	88,615	69,552	19,063
Nova Scotia.....	523,837	298,487	225,350
New Brunswick.....	387,876	265,648	122,228
Quebec.....	2,361,199	1,038,128	1,323,071
Ontario.....	2,933,662	1,226,292	1,707,370
Manitoba.....	610,118	348,651	261,467
Saskatchewan.....	757,510	538,552	218,958
Alberta.....	588,454	365,550	222,904
British Columbia.....	524,582	277,020	247,562
Yukon.....	4,157	3,182	975

It is these known resources, added to our vast forest areas, agricultural and most extensive water-power resources, that undoubtedly make of Canada one of the most promising fields of industry. But though extremely valuable, they might prove of little worth to the present generation of Canadians were it not that they lie next to the wealthiest, and the most prosperous, country, the United States, which has the money to develop them and which, year by year, is taking an increasing interest in Canadian investment and development.

Great Britain also is showing signs of a greater interest in Canada. Within the past month, representatives of the Federation of British Industries and the Glasgow Chamber of

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Norman S. Rankin, *Editor of Publications.*

E. L. Chicanot, *Asst. Editor.*

Commerce have visited us, and are looking into conditions with a view to increasing possibilities of trade and investment in many lines of industry.

Canada's total population, in spite of reduced figures of immigration, according to the final report of the Bureau of Statistics, is 8,788,483, an increase of 1,581,840 over those returned at the last decade. The balance between rural and urban is slight, rural leading by something over 600,000.

General Agricultural Situation

By J. Dougall and T. S. Acheson, General Agricultural Agents, C.P.R., Eastern and Western Lines

Agricultural reports, covering the Dominion as at August 1st, continue to be encouraging. Generally speaking the crop situation may be said to be above normal. The wheat crop of Western Canada is now assured and the conditions as to pastures, hay and root crops in the east are generally excellent.

British Columbia.—More moisture would be welcome, and the output of the apple districts will be somewhat reduced on this account. The estimate for the Okanagan Valley is now 2,281,000 boxes, or 80 per cent of the crop of 1921. Some estimates, however, quote the crop as 70 per cent of that of 1921. Other fruits will also show a reduction from the same cause.

Alberta.—This province received a fair amount of moisture during the month of July, the only district reporting a shortage being Peace River, where local showers are improving the situation. The cutting of rye has commenced. Wheat is well headed out and in good condition, having suffered no damage from hail. Pastures and stock are in excellent shape.

Saskatchewan.—Scattered showers have been experienced throughout during the month, and there is merely a small area in the north central part of the province lacking moisture. Fall and spring rye both indicate good crops. Wheat is heading out nicely and in healthy condition. The cutting of rye is general. Feed for stock is ample.

Manitoba.—Weather conditions have so far been satisfactory. Wheat heads are good and healthy and bear promise of heavy yield. It is anticipated that wheat harvesting will be general by the first week of August. There are no reports of black rust. All districts are expecting bumper yields. Livestock, pastures, and hay conditions are excellent.

Ontario.—Crop conditions throughout are extremely satisfactory. The cutting of fall wheat is about complete and the crop is all that could be desired. Oats also promise a heavy yield. In the great corn district of Essex the crop is reported as unusually good. Potatoes are showing indications of a good yield. The apple situation is bright but the quality is somewhat uneven. The yield is estimated at 1,151,000 barrels. The hay crop has been all that could be expected, and livestock is entirely satisfactory.

Quebec.—Weather conditions have been ideal and the general crop situation is very satisfactory. The hay crop is being harvested in most excellent weather. Reports of grain crops are very fine. The apple crop is estimated to exceed that of 1921 by 75 per cent and to amount to 61,600 barrels. Pasture and livestock situation good.

New Brunswick.—Conditions are generally bright. Rains have assured the hay crop. Potatoes are well above the ground and healthy, though the potato bug has been prevalent this year. The apple crop is estimated at 25 per cent over 1921, or 41,250 barrels.

Nova Scotia.—Reports indicate that all crops are in first class shape. Hay will make an abundant crop. Potatoes and roots are coming along well. The apple crop of the Annapolis Valley is estimated to yield 75 per cent of that of 1921, or 1,577,000 barrels, and reports show the crop to be good and clean.

Prince Edward Island.—Farming conditions on the island are excellent. The output of the co-operative organizations is being well taken care of. The hay crop is extremely satisfactory.

New Farming Areas of Saskatchewan

In the tremendous expansiveness of the Western Canadian provinces and their comparatively recent date of settlement, it may be generally stated that the portions of the province about which little or nothing is known are more extensive than those which have been settled. The areas north of the settled regions, in fact, constitute the greater portion of each province. In Saskatchewan, after passing a little north of the Saskatchewan river, a country is penetrated which is entirely new, one not yet carefully explored, and about which, for the main part, information is rather vague. The map shows it to be a country well watered and the numerous posts of the Hudson's Bay Company indicate that it is a profitable fur country. But of its agricultural possibilities little is generally known.

Recently a collection has been made of the reports on this area, meagre enough, of the North-West Territories Government, the Department of the Interior of the Dominion government, and of two exploration parties sent out by the Saskatchewan Government, which despite their fragmentary nature indicate that vast tracts of rich agricultural land, running into many millions of acres, exist in this area directly tributary to present settlement, that climatic conditions offer no obstacle to farming there, and that where experiments in agriculture have been attempted they have been successful. The presence of large bodies of water, it is stated, have a moderating influence upon the climate, giving the area milder seasons than sections of the province further south, and the sceptical have but to give due consideration to the fact that the area is in the same parallel as the Peace River country, looked to as one of the potentially greatest wheat growing areas of the Dominion and which produced the world's prize wheat more than twenty years ago.

Great Agricultural Possibilities

To all intents and purposes this area under consideration is uninhabited except for certain settlements of Indians and half-breeds, occasional church missions and a few scattered fur posts. The only agricultural production attempted in this region is such as is to be found at these little settlements, being necessarily on a small scale, but having been carried on for, in some cases, the space of half a century; what has been done, however, is sufficient to give a fairly good indication of agricultural possibilities on a large scale when farm settlements shall have filled up the area.

The area considered in the survey is that lying north of the towns of North Battleford and Prince Albert, between the Saskatchewan and the Churchill Rivers, described as a gently rising country, having much the appearance of North-Western Manitoba, the land being well adapted to farming. The soil for the main part is a

rich loam with a subsoil of sandy clay, much of the land being sparsely covered with spruce and pine. Local differences make the pursuit of every kind of agriculture possible, grain growing being adapted to a large area, mixed farming suggesting itself as more profitable to a larger expanse, whilst certain sections are said to be unsurpassed in the West for cattle ranching. Along the Clearwater River and Valley is described as splendid ranching country, with hay abounding and water and shelter being easily available, the rolling hills blown clear of snow in the winter affording excellent range for stock. Equally fine range is to be found in the Pembina Valley, whilst the Meadow Lake district, which is practically prairie, is described by the explorers as some of the very best land in Canada.

The Pembina a Most Fertile Valley

At Lac la Ronge, approximately one hundred miles north of Prince Albert, wheat has been raised for many years without suffering from frost, by the missionaries, whilst potatoes are raised every year with good results. In the Pembina Valley, much farther north, wheat and oats have been grown in small quantities successfully, whilst every variety of vegetables was seen in the gardens, thriving in the very best of condition—potatoes, cauliflower, lima beans, green peas, carrots, turnips, onions, lettuce, beets, parsnips and tomatoes. The Indians here grow a little barley and claim that they have never had a failure of this crop for fifty years. Small fruits also grow excellently, splendid crops being encountered of currants, gooseberries, raspberries, and strawberries, all large and mature. At other places potatoes, oats and barley have been grown for thirty-five years without record of failure.

Exploring parties have estimated that in this area between the two rivers there are ten million acres of land, in large and small tracts, capable of producing crops which will enable settlers to make a comfortable livelihood. Whilst the addition of these millions of acres to the province's available farming lands may not be an important consideration at the present time when Saskatchewan has yet much surveyed land to be settled, yet the disclosure of this possession is significant of the almost limitless possibilities of agriculture in an area already producing an annual volume of 188,000,000 bushels of wheat, or half the Dominion's yield of this crop. Looking back at Saskatchewan's sparse state of settlement a quarter of a century ago, and in the light of its present production, it is not difficult to foresee the time when these northern tracts, surveyed and made more accessible, will be producing as fine crops as those raised at present in the sections to the south.

Resources of the James Bay Area

The Temiskaming and Northern Ontario Railway, at present operating between North Bay in the south and Cochrane in the north, is being extended northwards this summer as far as Oilcan Portage, a distance of roughly one hundred miles, which extension is expected to be in operation in the spring of 1923. This penetration is part of the opening up and general development of the little known James Bay area of Northern Ontario, a region rich in a wide variety of natural resources, in agricultural land, minerals, forests, water-powers, fish and game.

The general surface of this area is rough, dotted by lakes, swamps, and muskegs, with a steep grade from all sides towards James Bay. The area is exceedingly well drained by many mighty rivers which find their outlet in the bay, and from the railway a water route to James Bay may be followed with no portaging except in very low water. This route is feasible for such craft as gasoline pointers. The district of Patricia, extending north and north-west and having an area of 146,000 square miles, has seen very little prospecting attempted as yet and it is almost a virgin field. The area farther south is stated to offer a prospecting ground unsurpassed for potential mineral wealth, Silurian limestones, exposed in the river

banks, revealing deposits of gypsum, lignite, refractory clays and iron ores. The formation also suggests the possibility of the occurrence of petroleum, natural gas and salt.

Climatically this region is not undesirable. Though the winters are long the summers are warm and of fair duration. The between seasons are very short. Spring usually begins about the latter part of April, and in a few weeks rivers are free from ice and all the snow is gone.

Its Agricultural Possibilities

Extending westerly from the Quebec boundary a distance of about 350 miles is the great clay belt of Northern Ontario, which promises to become an exceedingly rich farming country. The clay belt runs one hundred miles north of Cochrane, and it is estimated by the Government that in the area north of the railway there are at least five million acres of level, undulating ground, admirably adapted to the pursuit of farming. The soil is a rich clay, slightly stony, high in lime, very similar to that in the Temiskaming area to the south where agriculture has been carried on most successfully for many years. Many kinds of grain and vegetables can be grown successfully in this area. Grain was seeded at the Dominion Experimental Farm on May 10th in 1920 and the grain matured with excellent yield. Gardening has been successfully carried on for years at the Hudson's Bay posts and by the Indians. The future of the area, however, appears to be in livestock production and mixed farming rather than wheat growing. Clearing entails a good deal of labor, which will make development necessarily slower. Hardy men, experienced in bush life, with a little capital to begin with, will meet with success in this northern area.

The Presence of Minerals

Prospecting is difficult in this area as the rocky exposures are almost entirely confined to the rivers. Siderite occurs on the Mattagami river, the main ore body having a maximum width of about 600 feet and analyzing 43.52 per cent iron. Enormous areas of swamp and muskeg are underlaid by peat, of good quality but uncertain depth. No coal of any economic importance has yet been found, though lignite of low grade occurs along the lower stretches of many of the rivers. There are several outcrops of gypsum on both banks of the Moose river, the thickness of the deposits being estimated at at least 40 feet. Pyrite mixed with pyrrhotite occurs on the Mattagami river, the sulphur content not exceeding 25 per cent.

Kaolinized syenite occurs on the Mattagami river, and though too impure for chinaware may be important as indicating the presence of true kaolin in the region. Fireclay claims have been staked on the Missinaibi river and samples taken are said to be of good quality. Pink, yellow and greyish white clay deposits on the Mattagami would appear suitable for the manufacture of porcelain, wall and floor tiles, and table ware. Marine clay occurs near James Bay, suitable for brick. Certain isolated patches of swamp clay suitable for brick or drain tile occur in the region. Devonian, Silurian, and Ordovician clays are exposed in many places throughout this region and some may be of commercial value with the development of the district.

Dark bituminous shales outcrop on the Mattagami, and though at present limited, further prospecting may show the presence of larger areas. Shales occur on the Abitibi, exposed sections being 30 feet high. The oil content varies considerably, one surface exposure analyzed giving crude oil yield of 3.9 per cent. and another sample 5.5 per cent.

Enormous Forest Areas

Enormous areas of spruce and other pulpwoods are interspersed throughout the area between Cochrane and James Bay. Many rivers are well provided with suitable sites for hydro-electric development and greatly add to the value of these forest lands. East of a line drawn from Cochrane is a dense forest, of which about 80 per cent. is spruce and the balance tamarac, a little birch and poplar.

West of this line is a considerable area of bald rock, only about 80 per cent. of the area being forested, principally with spruce, birch, and poplar. About 15 per cent. of the spruce is of merchantable size, the largest growth being attained near the creeks and rivers. Between the Mattagami and Missinaibi rivers the country is fairly well wooded with possibly 65 per cent. spruce, whilst between the Missinaibi and the Albany the country, so far as is known, is largely muskeg sparsely covered with small spruce and jackpine.

Water-Power Development

On the principal rivers of the area nearly half a million horse-power is capable of development having regard merely to the more important sites. The only developed water-power site is Smooth Rock Falls on the Mattagami river, where a 9,300 horse-power turbine has been installed by a pulp and paper company.

Fish and Game

Whitefish are found in large quantities in James Bay and in many of the lakes. Sturgeon exist in all of the rivers flowing into the bay. Suckers occur in great abundance in all the fresh water and constitute an easily procured food for the Indian and his huskies. Goldeyes are found in some of the upper waters and tullibee in the vicinity of James Bay. Speckled trout extend over the whole western James Bay watershed and capelin along the shores of the west coast. Both pike and pickerel abound in all these northern waters, as do fresh-water ling, whilst some of the lakes contain lake trout.

Moose are found almost as far north as the bay, but deer only in the southern part of the area. Cariboo range north of the Albany river and throughout the district of Patricia. Fur-bearing animals are still abundant despite the annual toll, bear, fox, lynx, otter, martin, mink, weasel, wolverine, beaver, skunk, muskrat, rabbit being the principal. Ducks and geese are in great abundance around James Bay, where they breed in thousands. Partridges are found in most of the southern area and ptarmigan farther north.

Automobile Industry Expands

The establishment in Canada of United States and other foreign industries and the locating of Canadian branch houses continues without cessation as the many advantages Canada offers in the manufacturing trade are brought home to manufacturers. A noticeable feature of this development in industry within the past year has been the expansion effected in the Canadian automobile industry, the number of plants in Canada having been swelled by the location in the Dominion of many United States concerns as well as new Canadian incorporations, and there is every indication that this branch of Canadian industry is destined to attain a higher standing than the important place it already occupies in Canadian economic life. In addition to the attraction, from a business standpoint, of the large annual consumption of cars in Canada, the Dominion extends peculiar advantages to the manufacturer for engaging in the export trade, particularly with countries in the British Empire.

The automobile plays no insignificant rôle in all phases of Canadian life, and the Dominion ranks in the second place among the countries of the world in the per capita ownership of cars

with approximately one car to every eighteen persons. Canada's consumption of automobiles necessitates an annual replacement of eighty thousand cars. The use of cars is on the increase too, especially since they have been introduced in such numbers in the country districts of the newer West, where they have virtually revolutionized farm life through the conveniences and diversion made possible.

Steady Growth Since 1920

There were in Canada in 1920 seventeen automobile plants in which a capital of \$53,966,506 was invested and which accounted for a production of \$101,465,846. A total of 8,281 persons, receiving wages totalling \$13,331,084, found employment therein. In addition there were sixty-two automobile supply plants capitalized at \$15,332,887, employing 3,092 persons receiving \$4,769,996. The value of their production was \$19,361,882. Passenger cars alone produced in Canadian plants in 1920 accounted for \$84,500,000, and that year there were throughout the Dominion 5,500 dealers.

In making an appraisal of the automobile industry in Canada at the present time, account must be taken of a rather remarkable expansion which the industry has experienced within the past year. In addition to new manufacturing and assembling companies at Montreal, Toronto and other places, the General Motors Corporation of New York is now concentrating the manufacture of all export models of automobiles at a Canadian plant at Oshawa, the object in so doing being solely the fact that it believes circumstances are more advantageous there for engagement in the export trade.

The Ford Motor Company of Canada is commencing the immediate erection of a huge motor plant adjacent to the present factory in Ford City, near Windsor. The new plant will cover approximately 125 acres and will cost in the neighborhood of \$6,000,000, extending for 2,000 feet along the river front. It is expected that the production of the Canadian Ford will be doubled immediately the new plant starts to operate, and the plans are to turn out 500 cars a day in place of 250 as at present. The entire capacity will permit of an output of 1,000 cars per day as soon as the state of the market warrants this.

British Car to Compete

Indications are that British car manufacturers are likewise beginning to become interested in the Dominion as a locale for manufacturing and engaging in the export trade, and that some expansion in the Canadian industry may be expected through the action of English firms establishing plants here. Whereas the capital invested in the automobile industry in Canada has hitherto been almost purely United States,

it is now announced that the pioneer English motor car concern is to establish a branch factory in Canada to compete with the United States cars.

Canada's export trade in automobiles is an important and growing one. In the fiscal year 1921, 15,620 passenger automobiles valued at \$11,376,268 and 4,290 freight automobiles valued at \$2,602,853 were exported. The growth of this trade within quite recent times can be gauged from a comparison with the 1919 figures, when 11,613 passenger automobiles valued at \$5,989,908 and 2,567 freight cars worth \$1,313,770 left the country. Canada's markets for this kind of manufacture cover the greater part of the globe. The United Kingdom, Australia, New Zealand, India and the United States provide the most valuable markets, but the product also goes in substantial volume to the Argentine, Brazil, Africa, Chile, China, Egypt, Japan, Mexico, Norway, Peru, Portugal, Spain, Sweden and other countries. Canada is continually ranking higher as a source of purchase of motor cars, especially by Great Britain. During the first quarter of 1922 the Dominion ranked first as a source for the number of finished cars and fourth with respect to chassis in the British motor car imports. The United States was fourth in cars and third in chassis.

The Export Markets

When one analyses Canada's export markets in the automobile trade, it becomes evident just what attraction Canada has for United States and foreign firms engaging in this manufacture. The most extensive and profitable markets have been found and developed in the countries of the British Empire where Canada, as a unit of the Empire, receives the benefits of many preferential tariffs. The regular tariff on motor cars from foreign countries to the United Kingdom, for instance, is 33 1-3 per cent. From countries within the Empire there is a preferential tariff one-third less, or 29 2-9 per cent. The New Zealand tariff provides for a regular duty of 25 per cent and a preferential one within the Empire of 15 per cent. This latter also applies to Samoa. Southern and Northern Rhodesia have a regular tariff of 20 per cent on motor cars coming into the country and a preferential rate to British countries of 17 per cent. Australia follows the British preferential tariff in giving a rate 15 per cent lower than the general one on British Empire automobile products.

The growing use of the car both in Canada and in the countries with which she has developed her greatest export automobile trade, all being countries of expanding population and increasing prosperity, makes the Dominion a peculiarly suitable one for the location of automobile plants, and manufacturers are coming in an ever greater degree to realize this.

Textile and Industrial Centre

Already that territory known as the Eastern Townships of Quebec has two claims to world distinction which will never be wrested from it. It leads the world in the production of asbestos, accounting for 85 per cent. of the globe's entire supply, and likewise, with a production of eight million pounds annually, has the leadership of the world in maple sugar output. Now the Eastern Townships are making a new bid for fame and seem to be destined to become one of the principal, if not the leading centre of the textile industry in Canada.

Within the past few weeks the Dominion Silk Dyeing and Finishing Company, a branch of the National Silk Dyeing and Finishing Company of Patterson, New Jersey, has located at Drummondville, Quebec; the Premier Silk Mills, capitalized at \$250,000, has established at Cowansville, Quebec; and the Franco-American Company, engaging in the dyeing and finishing of all textiles, is erecting a commodious plant at St. Johns. This makes a total of fourteen textile industries which have located within the past three years in the Eastern Townships, expending about twelve million dollars on plants and equipment. Among them are manufacturers of tire fabrics, corsets, silk hosiery, gloves, silk dyeing and finishing, cottons, furs, and silks.

Developments would indicate that this territory will be the home of all the silk manufacturing industries of Canada. Already practically all the textile plants of Canada manufacturing tire fabrics are to be found there and the manufacture of cottons and woollens is continually growing in importance throughout the territory. Sherbrooke has woollen and cotton mills and manufactures clothing, silk gloves, hosiery, underwear, cotton fibre and auto-tire fibre. At Drummondville there are silk and cotton mills and plants for the manufacture of hosiery and tire fabric as well as silk dyeing. Cowansville has a silk mill. Coaticook is engaged in the manufacture of fabrics and fire hose and has woollen and knitting mills. Lennoxville has important hosiery manufactures and Magog textile prints, whilst Richmond, Victoriaville, Farnham and Waterloo are occupied on a smaller scale with the manufacture of woollen and cotton goods. St. Hyacinthe has woollen, cotton, and clothing establishments.

A Wide Range of Products

The textile industry, it must be realized, is only a phase of an industrial activity which is general throughout the area, but which has come in a peculiar manner to centre about the growing cities and towns of the Townships. Practically every line of manufacture necessary to the maintenance of the economic life of the province and the Dominion is followed there, whilst the export trade is growing substantially. In addition to the above, and to asbestos and maple sugar, stone products, copper milling, rubber goods, machinery, biscuit making and matches are all important, whilst the principal centres of the Canadian tobacco industry are to be found within the area. At St. Johns are located felt establishments, insulated wire factory, clay and pottery works, collar and shirt factories, and an immense sewing machine establishment, whilst St. Hyacinthe possesses the largest pipe organ factory on the continent, which has had the distinction of exporting its manufactures to Europe.

Nature poured her gifts lavishly upon this section of the Dominion, and in developing the area industrially, man has merely begun to take adequate advantage of what nature provided. The territory is situated in the heart of one of the richest farming areas of Quebec and maintains in a gratifying manner an equitable balance between rural and urban population. The labor situation is peculiarly favorable, the province being regarded with envy all over the American continent for its freedom from strikes and labor disorders. Transportation facilities are unsurpassed, the Eastern Townships being served by no fewer than eleven Canadian and United States railroads.

One of the greatest advantages the area possesses lies in the fact that it is served by one of the largest and most efficient power concerns in Canada, the Southern Canada Power Company, Ltd., ensuring an adequate supply of power for the operation of any industry on any scale at terms which are attractive to the manufacturer. About sixty cities and towns in a territory of five thousand square miles are supplied by the company with power, two hundred and fifty miles of high transmission line distributing this to the various municipalities and urban centres.

Possesses Distinct Advantages

The many advantages held out by the Eastern Townships, some of which are peculiar to that area, have not only brought industrial concerns from the Eastern United States to locate there, but induced manufacturers from as far west as Chicago and beyond, convinced of the wisdom of establishing a branch factory in Canada, to settle in the Quebec area. Industries to be found operating at the present time represent many states of the Union.

Whilst the Eastern Townships of Quebec are largely drawing their industries, in the shape of branch factories, from the Eastern United States, they are without doubt drawing a supply of their labor from the same source. The industrial prosperity of the New England states and Quebec's lack of development in this regard drew away, years ago, a considerable volume of the French-Canadian population, and Quebec's present remarkable expansion in industrial manufacturing is luring them back to the home land they have never forgotten. In the province's assurance of continued industrial progress there is no reason to doubt but that there will be available a supply of experienced labor, of the kind that has made Quebec the envy of industrial America, in greater numbers.

Of recent years the United States has come to realize, to an ever greater degree, that the only effective manner of overcoming the Canadian tariffs against United States goods and securing Canadian trade, as well as obtaining the advantages of British preference and entering the Dominion's export trade, is by locating a branch manufacturing plant in Canada. British manufacturers, in the brightening of trade prospects in the British Isles, are also keenly alive to the new method of trade warfare, and the vanguard of what will probably be many British branch industries has recently been announced as locating. The Eastern Townships have been securing their share, and, with the peculiar advantages they hold for industrial development, will undoubtedly continue to attract manufacturers from both countries.

The Confectionery Industry

The confectionery and chocolate industry of Canada constitutes an important activity, absorbing \$80,000,000 of industrial capital. Last year total sales of candy in Canada are reported by the Confectionery Association to have approximated \$80,000,000, and it is expected that the sales this season will amount to nearer the \$100,000,000 mark. Such makes of Canadian confection as Betty Brown, Patterson, Laura Secord, Ganongs, Page & Shaw, Neilson, Cowan, Lowney, Willard and Moir are not only familiar from coast to coast, but the high quality of the product has extended their fame into many countries. In the manufacture of chocolate and confectionery of all kinds, Canada is in the gratifying position of being not only able to supply her own requirements but engage in a substantial export trade.

In 1920 the chocolate and cocoa industry of Canada was carried on in nine plants, capitalized

at \$5,553,571, with 1,400 employees receiving \$1,245,693 in wages and accounting for a production of \$8,908,277. The kinds of products comprised chocolate, cocoa, cocoa butter, confectionery and spices, of which chocolate accounted for more than half the value of production. Quebec and Ontario are the centres of the trade, there being five plants in the former province and three in the latter, with one plant in Nova Scotia.

There are four hundred individual plants in Canada engaged in the manufacture of biscuits and confectionery, of which 225 are located in Ontario, 49 in British Columbia, 47 in Quebec, 28 in Alberta, 17 in Manitoba, 13 in Saskatchewan, 10 in Nova Scotia, 9 in New Brunswick, and 2 in Prince Edward Island. The total capital invested in these plants is \$31,217,581, Ontario leading with \$19,253,822. They employ 12,722 persons at salaries and wages aggregating \$10,538,291. The production for 1920 was in value \$54,658,833, covering buns and pastry, biscuits, puddings, confectionery of all kinds, ice cream and other products. There is a small importation of certain products, amounting to \$924,363, which is effected almost equally between the United Kingdom and the United States.

Exports of Manufactured Confectionery

Canada's exports of manufactured confectionery amount in value to more than \$2,700,000 annually, going to practically every country of the globe. Listed in Canadian trade under confectionery, but not manufactured, there is a voluminous export trade in other products amounting to over \$15,500,000. This is made up of glucose and glucose syrup, maple sugar, maple syrup, molasses and syrups of all kinds and sugar of all kinds.

From the manner in which the trade returns are compiled it is not possible to determine what proportion of the exports is accounted for by chocolates, but there is reason to believe that they are substantial and on the upgrade. There are reports from many countries of the growing popularity of the Canadian confection, and manufacturers record the export trade as being healthy. The Canadian army overseas had a good deal to do with popularizing Canadian chocolate in the British Isles, France and other countries, and in the comparison created by the sending of large quantities of Canadian chocolate to Europe during the war years the Dominion product did not suffer. According to the British Trade Commissioner at Bristol, Canadian chocolates are finding a ready market in the British Isles on account of superiority, being larger and retaining moisture better.

Canada's confectionery industry, whilst not relatively a great one, is important in so far as it is adequately meeting Canadian domestic needs and aiding in augmenting the Dominion's

export trade. There exist opportunities for much development yet, which in the aggressive-ness Canadian manufacturers are exhibiting will doubtless be seized. Sufficient advantage was never taken of the peculiar quality and flavor of Canadian chocolates, and the maple sugar industry up to quite recently was permitted to wane because its delicious product was not known abroad. These matters are being remedied, and the industry is likely to become a more important one to Canada.

Twenty Minutes of Railroadng

The President of the American Railway Association, R. H. Aishton, having been requested to make a twenty-minute address on "The Railroad Situation" before the Academy of Political Science at the Hotel Astor, New York, conceived the brilliant idea of occupying his time by telling his auditors just what American railroads were doing while he talked—what they did, what they earned, what they spent in the course of twenty minutes. The yearly figures, Mr. Aishton noted, are too large to understand without strain. To say that the first-class roads of the United States moved 306 billion tons of revenue freight one mile in the year 1921 is somewhat confusing, whereas the figures for twenty minutes are down among the thousands, and quite within our comprehension. "Let us," said Mr. Aishton, "get down to something we can all understand without undue mental strain."

He went on, as quoted in *The Railway Review* (Chicago):

"I have been allotted twenty minutes. During that twenty minutes the energy developed by the railroads is equivalent to moving a train consisting of a locomotive with ten freight cars, carrying 311 tons of revenue-paying freight, with two more freight cars containing 38 tons of company freight that doesn't produce revenue, with two passenger cars, containing 38 paying passengers, together with the employees necessary to operate the train, with the necessary postal, baggage and express cars, and a little red caboose, a distance of 37,500 miles, or once and one-half times around the earth at its greatest circumference.

Comparison of Earnings and Expenditures

"What do they get for performing this service? The year 1914 is taken for comparison, because it marked the start of the European War, the beginning of all our troubles:

"In 1914 every 20 minutes the gross earnings were \$115,347.

"In 1921 every 20 minutes the gross earnings were \$209,874. An increase of 82 per cent.

"In 1914 every 20 minutes the operating expenses were \$83,844.

"In 1921 every 20 minutes the operating expenses were \$173,652. An increase of 107 per cent.

"In 1914 the payroll for 20 minutes, \$50,888.

"In 1921 the payroll for 20 minutes, \$106,579. An increase of 109 per cent.

"The above indicate what's the matter, and beyond all that consider this also:

"In 1914 every 20 minutes there was paid in taxes, \$5,159.

"In 1921 every 20 minutes there was paid in taxes, \$10,526. An increase of 104 per cent.

"In 1914 every 20 minutes the net railway operating income (which is the amount left after payment of expenses and taxes) was \$25,158.

"In 1920 it practically disappeared, being only \$822.

"In 1921, however, with an increase of 3,091 millions in investment over 1914, the net operating income every 20 minutes was \$22,755.

"In other words, whereas the book value increased 18 per cent. between 1914 and 1921, the net railway operating income earned on the investment thus increased actually decreased 9.5 per cent.

"What are the railroads doing to bring about economy and efficiency?

"In 1921, although the times were depressed, as was the case in 1914:

"They handled 7.7 per cent more revenue ton miles than they did in 1914.

"They handled 8.0 per cent. more passenger miles.

"They did it, however, with 10.6 per cent less train miles, and the train mile is what creates expense. There must have been economy and efficiency manifested there, surely.

"In 1920, with a large business, as compared with 1914, with a light business.

"There was an increase of 44 per cent in revenue freight ton miles.

"There was an increase of about 36 per cent in revenue passenger miles.

"Yet this was accomplished with the same train miles, practically, as 1914. As a matter of fact, it was 300 miles less every twenty minutes than in 1914. Truly a notable record!"

Every railroad, Mr. Aishton went on to say, has been and is making the strongest individual efforts, through its own organization of experts, to develop new methods of efficiency and economy. No industry in the country has any more complete check on the minutest details of their operations, or has competitive initiative developed to a higher degree, than the transportation companies.

From Coast to Coast

By Right Hon. Viscount Northcliffe

C.P.R. Just three initials, which most of us have learnt during the past twenty years or so to regard with the same indifference as G.W.R., G.E.R., or G.N.R. Just a big railway which, we are told, runs from the Atlantic to the Pacific, a journey of over 3,600 miles.

We read about Canpac shares in our morning papers, we see beautiful models of great steamers in the Cockscur Street offices of the Company, and we hear enthusiastic descriptions of the gorgeous scenery through which this three-letter railway runs. To most of us who have not crossed from sea to sea by this marvel of marvels, there is perhaps not a very great difference between C.P.R., P.L.M., and the other big railways of the world—an appeal to the romantic, which lies buried somewhere in the staidest Britisher, not very much more powerful.

The fact remains that there are few journeys more full of romance, of beauty, of adventure than the run we are making this week between

Toronto and Vancouver. It is land-yachting, it is doubling Cape Horn in an old wind-jammer, it is pioneering—above all it is pioneering.

These tremendous trains run daily from coast to coast with the same regularity, almost with the same punctuality, as do the expresses from London to Edinburgh, yet every one of them is in a sense a pioneer. Since we left Toronto we have passed through country which is exactly the same wild savage tract of stone-pines and gaunt rocks as it was when the first blow of a pick-axe announced the birth of the C.P.R.

Wonderful Shooting and Fishing

None but the wild animals live there, bear, black fox, elk, moose, and deer. The lakes and streams are full of bass and trout and pickerel—a sort of big perch—and to you looking out of the window of a C.P.R. train the whole land is a sportsman's paradise. It is a fair-sized piece of the world which has not changed since the Creation.

Between Toronto and Calgary you pass every sort of scenery the world can show you. You find Norway, Scotland, the Roman Campagna (the capital of which is that little city with the great name, Medicine Hat), and, along the shore of Lake Superior, the Mediterranean by the French Riviera, and bits of the Adriatic by Corfu. For miles and miles on each side of Winnipeg you run through limitless wheat-fields stretching out on either side to the horizon, North Norfolk magnified a thousand times, a Sahara of grain.

Last night I awoke in the small hours. It was not because the train had stopped, but because a silence, an utter absence of any sort of sound, enveloped us. It is a commonplace to say "a silence which can be felt," but it was, in truth, exactly that, the wide world—the little station of Moose Jaw, I think it was—lay buried beyond rescue under a crushing silence. The vast size of the land around us, the sense of absolute loneliness, bore down on us tiny atoms like the Atlantic on the pebbles of its sea-floor.

Courtesy that Begins with Kindness

The courtesy of the C.P.R. officials, which I have known and enjoyed for nearly thirty years, is the proud and justifiable boast of the company, but it is that sort of courtesy which begins with kindness. All along the line we have had a special telegraph news-bulletin sent in twice a day, and the various divisional superintendents have left nothing undone to make our journey as pleasant as possible. For example, at Kenora I was taken for a short motor drive, abandoning the train, which stopped to pick us up a few miles farther on.

Again, every official on the train is eager to give you interesting information about the country, the cities, and the peoples, red and white. One thing which has particularly struck me on this journey is the deep affection in which the Prince of Wales and the Duke of Connaught are everywhere held. From all sorts of people I have heard just those little familiar sentences about them which mean so much and which among English-bred folk are used only about people they really like.

Years ago, when Canada was simply a huge, vague territory sprawling between the oceans, with nothing to bind it together or give this mighty Dominion real cohesion, people who were regarded as ripe for the asylum used to say that one day a great steel road would run across it from end to end and give it what it needed most, an artery. One of these dreamers was Bulwer Lytton, who made the prophecy more than sixty years ago. He and the rest were laughed at.

A Great Engineering Feat

Then the C.P.R. came along and, disregarding mountains and rivers and hundred-mile-long chains of lakes, every conceivable engineering obstacle, gave Canada and British Columbia their mighty steel road, over three thousand miles long, on which the whole economic life of the Dominion depends. And the whole of the extraordinary efficiency which permeates this colossal organization has been due, each in their turn, to Mount Stephen, Van Horne, Shaughnessy, and now E. W. Beatty, presidents of the C.P.R.

The C.P.R. is one of the greatest feats of engineering in the world, a thing before which a man should stand bare-headed. And the *Montmorency* and her sisters flit over it, back and forth, with the unconcern of a tramway-car.

I shall see many wonderful things on my long voyage round the world, but I do not think anything is likely to impress me more than this five-day run across a continent in the *Montmorency*.

The Movement of Canadian Wheat

The Canadian wheat crop has of recent years come to play a much larger part in the world's wheat trade, to what extent may be gauged from the fact that whilst at the beginning of the century the average amount of this crop annually available for export was about 24,000,000 bushels, it now averages about 225,000,000-bushels. The tremendous increase is, of course, due to the phenomenal development of the Prairie Provinces, which account for by far the larger part of production as well as the bulk available for export. The movement of the wheat, which pours from the prairies over the railways to various outlets as soon as the crop is threshed and continues in lesser volume practically until the next crop is harvested, constitutes a real problem in transportation, and it is interesting from many points of view.

For the purposes of the grain trade, Canada has been divided into two main inspection divisions, the Western and the Eastern, the dividing line falling just east of Port Arthur. Of the Canadian wheat crop of 1920, amounting to 263,189,300 bushels, a total of 235,059,827 were produced in the western division. Stocks on hand were 4,580,228 bushels, and imports amounted to 269,892 bushels, making a total flow into the western pool for the crop year of 239,909,947 bushels. The quantity of wheat disposed of for commercial purposes in the western division—that is, shipped out of, or milled within, the division—amounted to 187,998,634 bushels. Shipments out of the division amounted to 163,964,892 bushels, distributed as follows:—Exports to the United States 46,272,438 bushels; exports to the United Kingdom and other countries 37,717,742 bushels; exports to the eastern division 79,668,563 bushels. The quantity milled for consumption in Canada amounted to 21,404,712 bushels and 2,935,179 bushels were milled but exported in the form of flour. In addition it is estimated that 38,900,860 bushels were retained for seed and 5,257,073 bushels carried in store to the following year's crop.

Shipments through Terminal Elevators

The primary movement of Western wheat is from the farms to the terminal elevators at the lake ports of Port Arthur and Fort William. From here 24,239,986 bushels were moved by rail and 123,059,577 by water. Of the latter 55,270,869 bushels went to the Canadian ports of Goderich, Midland, Montreal, Port Colborne, Port McNichol, Quebec and Tiffin, and 67,788,708 to United States points—Buffalo, Chicago, Cleveland, Duluth-Superior, Erie, Port Hudson and Toledo. A total of 37,251,394 bushels were exported direct from Fort William and Port Arthur to countries other than the United States via United States seaboard ports.

The total quantity of wheat entering the eastern pool was 113,694,140 bushels, made up of 79,668,563 bushels from the west, 28,129,473 bushels of eastern crop, and 5,267,363 bushels carried over from the previous year together with imports of 322,572 from the United States. Shipments out of the eastern pool to the United States amounted to 2,941,113 bushels; to other countries via Canadian seaboard ports 32,300,876; to other countries via United States ports 16,941,616 bushels; a total of 52,183,605 bushels. Mill grindings for domestic consumption were 18,074,160 bushels, and for export 28,054,341, a total of 46,128,501 bushels. The total disposed of commercially was 98,312,106 bushels. Of the balance 1,806,282 bushels were required for seed and the carry over at the end of the crop year was 2,599,732 bushels.

The eastern exports of 32,300,876 bushels went out through Montreal, Quebec, North Sydney, Halifax and St. John, Montreal handling 25,784,113 bushels of the total. Other exports through Canadian ports were 466,329 bushels from Vancouver and 20 bushels from Dawson, making a total export of 32,767,225 bushels of wheat passing through Canadian points. The total export of wheat to the United States for consumption amounted to 49,213,551 bushels. Exports to the United Kingdom and other overseas countries amounted to 86,960,235 bushels. The total exports of wheat from Canada amounted to 136,173,786 bushels, or approximately fifty per cent of the total crop.

The Wheat Crop of 1921

These figures all refer to the movement of the 1920 crop up to the end of navigation in 1921. The Canadian wheat crop of 1921 amounted to 300,858,100, or approximately 38,000,000 bushels in excess of that of the previous year, this addition being available for export. Whilst part of this crop is still being marketed and statistics of exports cannot be secured, there are important changes to be noted in the movement of the wheat crop as not only

having a bearing on the marketing of this crop but the Canadian crops of succeeding years.

The United States tariff on agricultural produce whilst not affecting the bulk of the grain going to United States points for re-shipment, did seriously curtail shipments to that country for consumption, and has the effect of diverting a large part of this traffic to Canadian ports. Canadian ports in the same year found greater favor in the eyes of United States shippers as outlets for their grain, and Oriental importers came to purchase almost entirely the hard wheat of Canada, whereas previously they had been satisfied with the softer varieties of the United States. Then trial shipments in the previous year had proved the practicability of shipping wheat to Europe via the Panama canal from the Pacific coast, resulting in a further diversion of the 1921 crop and altogether changing the status of the Port of Vancouver.

The Port of Montreal achieved a record in 1921, but already in June of this year was approaching the figures of August last year. Vancouver, which in the previous year accounted for paltry shipments aggregating 466,329 bushels of wheat, has shipped over 7,000,000 bushels already this season, nearly half of which has gone to England via the Panama.

Occupying the Attention of Parliament

As will be noted, the greater volume of Canada's wheat exports is accustomed to find its outlet through the ports of the United States due to their advantages in elevator accommodation, marine insurance rates, and the cheapness of lake transportation over Canadian ports, resulting in a loss to Canadian transportation and other interests. This is occupying the serious attention of the Canadian parliament, to be followed by the application of remedies in as far as possible where they are needed. There seems a tendency, however, at the present time, for the situation to gradually right itself with the steady development of Canadian ports and their increasing accommodations and conveniences. From May 1st to December 1st, 1921, grain arriving at the Port of Montreal for export totalled 140,036,445 bushels, a volume in excess of all other Atlantic ports combined from Halifax to Philadelphia and Newport News, including the Port of New York. A surprising feature of this trade was the increase in the traffic from the United States for export through the St. Lawrence port, wheat increasing from eleven and a half millions in 1920 to twenty-seven and a half in 1921 and corn from 85,816 bushels to 25,178,581 bushels. The diversion to Vancouver may be considered almost entirely that of crop which would have found outlet through the United States. Altogether, whilst the existing situation is not particularly desirable from a Canadian point of view, the extensive developments which are taking place in all Canadian ports should go far towards gradually relieving the situation and giving the Dominion in an increasing extent the export of her wheat from her own seaboard.

Industrial Outlook in Western Canada

There has been a steady improvement in business conditions throughout the West during the spring and summer months, practically all lines showing increase in volume, with maintenance of price levels. Crop conditions warrant confidence in Fall trade, making the outlook for the remainder of the year one of fair average proportions.

Construction work for the first six months of the year has been largely confined to the building of residences; out of a total of \$21,049,200 the sum of \$7,772,200 is credited to houses

of all kinds. While the value of actual construction work is a little less than for 1921, for the first half of the year, there is a possibility of increased activities in this line before the year closes. There has been no effort to deal with any large projects, though many are under contemplation, giving the impression that the West is due for a distinct revival in building operations during the next few years.

The Manitoba Power Co.'s new plant is steadily progressing, with prospects of additional electrical energy being available early next year, giving the Winnipeg district an adequate supply of power to take care of incoming industries. The B.C. Electric Railway in the Coast Province has commenced work on two projects involving an expenditure of some \$1,300,000, one being the construction of a new dam at Stave Lake, which will permit of the addition of a fourth unit to the power plant at that point. The Pacific Mills Ltd., at Ocean Falls, is spending half a million dollars on a diversion dam and equipment in order to raise present reservoir levels, while at Britannia Beach, the Britannia Mining & Smelting Co. is busily at work on its new plant, and the construction of a concentrator by the Consolidated Mining & Smelting Co., Ltd., at a cost of \$1,250,000 is scheduled.

Activity Succeeds Optimism

Practically all lumber mills are operating with a continuance of good orders for export mills and an increasing demand on the Prairies for interior mills. Milling is showing steady activity, conditions being better than for some years past. A large amount of prospecting and investigation work is being done, with good showing.

In Alberta progress on the new irrigation project is continuous. Consideration is being given to a new power plant for the Bow River near Calgary, and active work is still being carried on in drilling for oil in the south and other parts of the Province. General business conditions show improvement with still greater volume in sight.

While development in Saskatchewan is not on any great scale this year, the good-looking crop has created a feeling of stability with improved trading. Fall business is marked as good, and there will be much activity before the year's end.

At the head of the Lakes at Fort William and Port Arthur, construction work is active, shipping business is fair and pulp mills busy. Considerable improvement is to be noted in all lines.

It is possible to speak of the West as having recovered from any feeling of depression and as being now on the road to better conditions with an optimistic outlook. With depleted stocks and somewhat restricted credit there should in the

near future, with the large crop, be a good demand for merchandise of all kinds, agricultural machinery and other products.

The West is in a fair way to do big business again.

The Temiskaming District

An experienced hunter and trapper who had followed his calling all his life in every section of Canada and then settled in the region of Northern Temiskaming, finding there the goal of his dreams, described the country as the best fur and game section of the wide Dominion. Allowing the justifiable claims of other areas of an expansive realm to this distinction, one cannot, after but a rough and cursory inspection of the region, but concede that such assumption has a basis of proven merit, and that the area on either side of Lake Temiskaming is, in fact, a veritable paradise for the hunter, fisherman, or out-o'-door lover. Not only is this section, by reason of the ruggedness of its formation and rough topography, the natural habitat of big game animals and fur-bearing fauna, but for the very same reasons is likely to largely remain so in perpetuity and this haven never be attacked by the inroads of more domestic industries.

The unique feature of this country is that it is by no means as inaccessible as its primitive, unblemished nature would suggest, and whilst existing in a state but little changed from when nature completed her work, is in daily touch and communication with the modern, civilized world, with such conveniences and advantages as this may bring in its wake. From the main line of the Canadian Pacific Railway at Mattawa, a branch line runs for forty miles to the settlement at Temiskaming, on the lake of the same name, whence a lake steamer travels three times a week the seventy miles to the lake's further extremity. From such points as Montreal or Toronto it is little more than a matter of an overnight's travel to leave civilization behind and plunge into the immaculate realm of nature. The wilds here are surprisingly close to the centres of Canadian business activity, with all that this means to the man of affairs with but a limited time for holiday or diversion at his disposal.

Quaintly Picturesque Scenery

The steamer trip upon the calm waters of the lake is in itself a leisurely pleasure which is, in some ways, unique—stealing calmly between tree-darkened shores, with no visible indications of human life, save an occasional trapper's log shanty. The water is strewn with thousands of logs, borne for many miles on the current, and bound for the mills below. The vessel steers gingerly round many a log jam, or rides valiantly over a boom. It is not at all unusual to see from the rail a moose making his way across the lake

from one shore to the other, to glimpse a deer at the water's edge scurry away at the closer approach of the vessel, or to disturb a bear at his ablutions and send him lumbering clumsily into the timber.

All is as nature first planned it, the only modern touch being the little steamer serenely pursuing its way, bound from the point of railway contact to an economically productive sector at the northern end of the lake, without in any way disturbing the tranquillity of the shore life between. The vessel with its human freight passes between the densely wooded shores, and when it has passed on all is still again, as if even the fringe of civilization's progress had never touched there. Only where, in a symetrically rounded bay, the Kipawa river pours its tempestuous waters over boiling rapids into the lake, is there a sign of human dwelling where the hunter and trapper, who found his life's dreams realized, has established a log camp.

Tree and bush life on either shore of the lake are so thick as to appear almost impenetrable. For the main part they constitute the undisturbed dwelling-places of nature's wild things. Merely a few trappers and hunters inhabit the region, and they have blazed out trails which are known only to themselves. But there are a thousand unknown and unmarked paths between the timber. Bear are plentiful and are shot and trapped in considerable numbers. It is impossible to travel any distance in the bush without encountering the tracks of moose and deer upon the soft earth near some stream or pond where they pass by day or come down under cover of darkness to drink.

Teeming with Fish and Game

Not only the waters of Lake Temiskaming, but the many rivers which pour their waters into it, and countless smaller lakes inland on either shore, teem with varieties of fish and furnish excellent sport and the most satisfactory fishing. Bass, pike, pickerel and whitefish are to be found in the larger lakes and rivers, whilst many of the smaller lakes contain trout. These same waterways are a joy to the canoeist, the lakes and streams interlocking for miles and permitting lengthy and varied travel through most wonderful country without the inconveniences of portaging.

Not a few ardent sportsmen from widely separated points on the American continent have discovered the joys of Temiskaming and make their annual pilgrimage there to unsullied nature, taking their toll of the region's bear, moose, deer or fish. For the main part they hold the secret of its charms close, fearful of spoliation. But it deserves to be more widely known among out-o'-door lovers of the continent, for it can provide numbers with the most enthralling of outings without undue toll being exacted of its

fish or fauna and without in any way losing that charm which disappears with the onslaught upon nature's strongholds by too many of the human kind.

Further Growth of Fur Farming

Returns from the fur division of the Canadian Bureau of Statistics, covering the year 1921, indicate an astonishing and most gratifying progress in the fur-ranching industry of Canada. As far as the greater part of the Dominion is concerned fur farming is yet to be regarded as a new industry but recently emerged from the experimental stages, so that the rapid growth it has experienced within the past few years and its adoption over the entire Canadian expanse are the best testimony to successful operation and portent for real importance in the future. In many of the comparisons made it is well to bear in mind that in 1921 furs and fur-bearing animals sustained somewhat of a slump in values.

According to the returns received there were 794 fur farms in operation in Canada in 1921, comprising 758 fox farms, 12 mink farms, nine raccoon, three marten, two skunk, four Karakul sheep, three beaver and three muskrat farms. The increase over the previous year in the number of fur farms was 206.

The total number of fur-bearing animals on these farms at the end of the year 1921 was 22,455 with a total value of \$5,775,095. In 1920 there were only 16,529 such animals with a value of \$4,722,905. These animals in 1921 comprised 17,321 silver foxes valued at \$5,588,315; 1,220 patch foxes valued at \$101,550,484; 484 red foxes at \$10,035; 210 mink at \$5,366; 750 Karakul sheep at \$60,000; and 2,470 miscellaneous at \$9,829.

The total amount received by fur farmers in 1921 from the sale of live fur-bearing animals and pelts was \$1,415,236 compared with \$1,151,556 in 1920. There were 15,127 fur-bearing animals born in captivity in 1921. Fur-bearing animals sold from these farms in the year numbered 3,175 worth \$806,139 and pelts sold 4,854 worth \$609,097.

Prince Edward Island, the Pioneer

The Province of Prince Edward Island, which pioneered the industry, maintains its prestige as Canada's first domestic ranching area. In the year 1921 its ranches increased in number from 309 to 359, the value of its lands and buildings from \$640,489 to \$737,085 and its animals from \$3,089,970 to \$3,248,120. The sister province of Nova Scotia has shown a remarkable growth in the year, the number of its ranches practically doubling, from 55 to 108. Quebec has one ranch more, rising from 80 in 1920 to 109 last year. Though New Brunswick, the other

Maritime province, has only 62 ranches, it surpasses Quebec and Nova Scotia in the quality of its stock, which have a value of \$598,730. Ontario exhibited a most surprising increase, the number of its ranches growing from 42 to 94 and the value of the animals from \$221,880 to \$374,517.

Great expansion during the year in British Columbia has given the Pacific coast province the lead in the West in this regard. It now has 21 ranches as against 11 in 1920, whilst the value of the animals these contain has grown from \$28,105 to \$63,735. The Yukon follows with 16 ranches, two more than in the previous year. Alberta has 14; Manitoba 6; and Saskatchewan 5. During the year the four western provinces increased the number of their domestic fur farms by approximately fifty per cent, but the value of the animals contained thereon increased by nearly one hundred per cent.

The Industry Increasing in Popularity

Prince Edward Island confines its attention to foxes, in which it has met with such signal success, and its fur establishments are exclusively fox ranches. Quebec is the second fox province and also has mink and raccoon ranches. Nova Scotia, third in fox importance, has also mink, raccoon, beaver and muskrat farms, and a Karakul sheep herd. New Brunswick is entirely a fox province. Ontario has in addition devoted attention to mink, raccoon, skunk and beaver. Manitoba is exclusively fox, as is Saskatchewan, but Alberta has in addition a Karakul sheep ranch and beaver farm. British Columbia is versatile, with ranches engaged in the domestication of foxes, mink, marten, beaver and muskrat. The Yukon ranches are entirely devoted to raising foxes.

The increasing popularity of fur farming in every section of Canada is encouraging to note because it denotes success and profit in the venture. The foundation of a great industry with wonderful possibilities and opportunities has been laid. This growth will proceed apace with the progress of settlement and cultivation, for, whilst a great portion of those northern tracts which give Canada pre-eminence as a producer of raw furs forms a permanent source of supply, the penetration of settlement inevitably results in a certain depletion which can only be offset by the product of the domestic ranches. With the steady increase in the number and production of these, Canada need never fear losing her prestige as the world's first fur-producing area.

Across Canada—St. John, N.B.

Not only has the city of St. John an important rôle to play in Canadian modern life, but by reason of its tradition, intensely British, has its own little niche in the structure of the Empire, whilst by reason of its strategic position

in trade and commerce it commands some share of attention from the world in general. Wrapped in memories of a history at once unique and romantic, St. John presents to-day a scene of modern industry and ceaseless activity.

The site of the city was one of the first points to be touched at by the French explorer, Champlain, and history was created there during the period of the French control of Canada. Later, in 1783, it became the refuge for many thousands of New England loyalists, who established homes and were the real founders of what was to be known ever afterwards as "The Loyalist City."

To-day St. John is, throughout the winter months of the year, Canada's principal inlet and outlet on the Atlantic coast, the gateway through which thousands of immigrants, coming from across the seas, are introduced to the new world and its new life, and through which much of the surplus produce of the Dominion finds its way to the world's markets. It is open for traffic all the year round, though in the summer months most vessels travel up the river to Montreal or Quebec.

A Population of 70,000

A city of about 70,000 population, St. John is delightfully situated on the Bay of Fundy at the mouth of the St. John river. This river, 450 miles in length, passes through a most fertile and productive region of exquisite beauty. Surrounding the city, and tributary to it, is a great variety of natural resources, agricultural products, water-powers, game, lumber, fish, coal, lime, gypsum, oil shales, natural gas, building and monumental stone, antimony, manganese, tungsten, copper, etc., many of which find their way, by the excellent rail connections, to the city for export.

The port's ocean connections give it touch with practically every part of the globe, the British Isles and European continent, South Africa, Australia, New Zealand, Bermuda and the West Indies and United States Atlantic ports. Its importance as a winter port is annually increasing, as is evidenced by the increasing volume of products to find egress through it and the number of vessels arriving. In the last winter season a total of 206 ocean-going steamers arrived as compared with 178 in the previous year, and the increase in traffic carried was in much greater proportion, the average cargo being much higher. St. John's total trade averages about \$140,000,000 per year.

Growing in Industrial Importance

Industrially St. John is important and is making steady progress in this regard. Its activities comprise lumber, woodworking, ship-building, metal foundries, machine shops, sugar refineries, grain elevators, nail factories, cotton

mills, printing, brush and brooms, fish and sardine plants, flour mills, biscuit factory, confectionery, tannery, oil plant, bag and box factory, wool and hides, brewery and cigar factory. Between 1917 and 1919 the number of industrial establishments in St. John increased from 237 to 307; the capital invested from \$24,343,720 to \$26,129,347; employees from 5,694 to 5,855, and the value of production from \$24,630,917 to \$40,263,494.

Despite St. John's long establishment, the many rich resources about it are only partially developed, and exceptional advantages for the location of new industries are offered by the city. Among these are pulp and paper mills. The port possesses very fine facilities for the collection of raw materials and for the shipment of manufactured products to Europe and the United States. Equally unique opportunities present themselves for the manufacture of textiles and engagement in the steel shipbuilding industry.

St. John combines a location of great utility with beauty of surroundings in a most striking manner, and the city is deserving of much greater attention from manufacturers, exporters, tourists and visitors of all kinds. It is one of the old-world spots of Canada, and as such is unduly conservative in broadcasting its many attractions, which in many ways surpass those of points further inland to which new arrivals hasten, regarding the old city merely as the country's gateway. Visitors of all descriptions will enjoy discovering St. John and its enchanting environs.

Technical Education in Nova Scotia

By Prof. F. H. Sexton, Halifax, N.S.

Nova Scotia was the first province to establish a comprehensive system of technical education. In April, 1907, the legislature provided for a Technical College and a whole series of secondary technical schools. These have all been developed during the fifteen years that have elapsed since then, so that they are to-day ministering to industrial workers in all the most important towns in the province.

The Technical College is the centre and head of the system. It provides for the training of technicians, engineers, and leaders in industry. In order to prevent undue duplication and overlapping the college entered into an agreement of affiliation with the five colleges and universities in Nova Scotia and Mount Allison University in New Brunswick. By virtue of this the four year college course for engineers was split into halves. The general training in science, mathematics, English, drafting, surveying of the freshman and sophomore year is given in each of the affiliated institutions. Each of these had the staff and equipment to carry on the work adequately, but would have had to go to enormous expense if each had prepared for the full four-year course. The professional training of the junior and senior years is carried on by the Technical College. Here the staff and equipment is provided by the Province in the four basic branches of engineering, viz.—civil, mechanical, electrical and mining, and students may graduate thence with the degree of bachelor of science.

Half a Million for Improvement

Up to date about \$500,000 has been spent on buildings and equipment for the college, and it stands as a thorough, scientific well-staffed institution for engineering training. The college keeps in intimate contact with the industries of the province and carries out industrial research and commercial testing of materials, ores, etc., in order to aid efficient production and the utilization of the rich natural resources of Nova Scotia. The graduates are found on the staffs in every important industry in the province and some of them have attained to prominent positions in the wider fields of the rest of the Dominion and the United States.

In order to assist industry in the proper development of bosses, foremen, and superintendents, the college has instituted a wide range of subjects such as electrical machinery, technical chemical analysis, steam engineering, metallurgy, assaying, architectural drafting, etc. for a period covering the first three months of each year. Ambitious men who had to leave school at an early age and who possess qualities of leadership in industry often find the path of promotion blocked because they do not possess certain technical knowledge. They often are highly skilled mechanics, but do not have acquaintance with the fundamental theory or science to advance to a higher position. For these men, the short courses open the locked door to success, because the only requirements for entrance are a public school education and practical experience in industry which fits them to profit by the instruction.

A Wide Range of Courses

Each man can take only one course and all day throughout the day he devotes all the time for three months to lectures, recitations and laboratory work in this one subject. A special corps of instructors who have all had thorough training and long practical experience is provided for these short courses. The students presenting themselves for instruction run from twenty to forty years in age and all are in deadly earnest. The amount of knowledge absorbed by these adults is hardly short of marvellous. They take their newly acquired knowledge back to their jobs and it is not long before they begin to forge ahead. Some of these short course students in a few years have climbed to positions quite as important as if they had had a full college course.

The Technical College also has a correspondence study division which offers a wide range of courses to those who cannot leave their daily work in order to improve their knowledge. The work offered covers a multitude of courses in general education, commercial and salesmanship courses, industrial and scientific courses, training for college matriculation and homemaking instruction. All of the courses are divided into short complete units so that each individual may start on the plane where he is fitted to begin and can stop when his ambition or his needs are satisfied. The work is carefully adapted to the requirements of the people living and working in the province and each case receives the most careful individual attention. All of the courses are sold to the students at cost. In this manner the service of the college can be carried to the most remote hamlet, farm or lumber camp.

Evening Secondary Courses

The most widespread effort in the realm of secondary technical education consists in a system of evening technical classes and schools which are maintained in almost every town of any industrial importance and every colliery town in the province. The classes are held throughout the six winter months from October 1st to May 1st. The kind of instruction, the number of classes, etc., varies according to the dominant industrial activities in the different localities. Instruction in practically any technical subject is organized where ten students are found to attend a class and an instructor can be obtained. The teachers are recruited mainly from the ranks of foremen, superintendents, and the technical staff of the industries and the

work is always intensely practical. The range of instruction covers such subjects as business English, bookkeeping, stenography and typewriting, shop mathematics, mechanical drawing, machine design, machine design, architectural drawing, building construction drawing, architectural design, estimating, car building design, structural steel drafting, ship drafting, elements of electricity, direct current machinery, alternating current machinery, gasoline engines, automobile repair, general chemistry, metallurgical chemistry, technical chemical analysis, steam engineering, marine engineering, navigation, garment making, dress-making, millinery, cooking, home management, land surveying, coal mining methods.

Local Advisory Committee

In every town a local advisory committee is formed of employers, business men, school commissioners, and representatives of organized labor. This committee acts as a guide and stimulus to the technical school. The classes are practically free because each student has only to pay a deposit of \$3.00 as an evidence of good faith and this is returned at the end of the session on the basis of the student's attendance. The opportunity lies at the threshold of every worker to acquire an education that will make him a more effective and intelligent producer without losing an hour's wages. Thousands of ambitious men and women flock to these classes every year and large numbers of those in responsible positions to-day attribute a great part of their success to the knowledge gained in these schools. Men in the coal mines who hold directive positions have to qualify by passing government examinations before they receive certificates of competency. The evening schools in all the colliery towns give the necessary training to enable the miners to qualify for such examinations and certificates. Consequently nearly all of the managers, underground managers and overmen in the mines are native Nova Scotians and former students of these schools.

Progress Steady and Sure

Trade training and day technical classes have not yet been developed to any great extent in Nova Scotia. The whole development of technical education in this country has been of such recent origin that the best methods of full-time or part-time instruction of youths for gainful occupations have only recently begun to be standardized. It appears that industry itself will have to take some share in this burden and that a good part of the learner's time will have to be spent in a factory in regular commercial production. Modified apprenticeship systems suitable to modern conditions will have to be evolved which are fair both to industry and to the learner. The time is ripe now for such a co-operative effort. Employers must have skilled workers, and it is not just to expect that a few corporations or the public school system will produce all of them.

Technical education as it has been developed so far in Nova Scotia has proved to be of great benefit to the province, to industry, and to the individual worker who has availed himself of the advantages offered. It is practically the only thing which has been wholeheartedly endorsed by both employer and employee. The progress in this branch of education has been steady and sure. In the days of bitter commercial competition between the nations which are immediately ahead, technical education is clearly one of the most powerful instruments for success which civilization has yet developed. Great strides are being made possible by the generous assistance of the Dominion to the provinces for the extension of vocational training, but greater efforts must be put forth in the future by industry itself in co-operation with school authorities to ensure the adequate training of its workers so that Canada may maintain itself in the economic struggle and win that place which her resources together with intelligence and capacity of her people entitles her to assume.

A Well-Balanced Population

Canada's total population, according to the final figures of the sixth census published by the Bureau of Statistics, is 8,788,483, an increase of 1,581,840 over the figures returned at the 1911 census, representing a gain for the decade of 21.95 per cent. This is to be compared with an increase of population amounting to 34.13 per cent between the census enumerations of 1901 and 1911, due consideration being taken of the fact that the last decade included the war years with their substantial death-roll and their virtual cessation of immigration and the immediate post-war era of restriction and discouragement of the same tide.

Canada's population exhibits a fairly even balance between urban and rural residents, the rural population of Canada being returned at 3,924,328 and the urban at 3,280,444. This is a trait peculiar to Canada among the Dominions of the Empire and is an indication of the general manner in which Canadian natural resources are being exploited and developed in conjunction with the settlement and cultivation of agricultural lands. Whilst agriculture continues as Canada's prime industry, first in all respects, the Dominion is also developing as a manufacturing country, not alone for domestic needs but with an eye to an expansive export trade, and a continuance of the balance of population is evidence of the manner in which the destinies of agriculture and industry are interwoven and progress hand in hand.

Rural and Urban Population

In the past decade the rural population of Canada has increased by 13.12 per cent whilst the urban has increased by 32.57 per cent. This is against respective increases of 17.16 per cent and 62.65 per cent in the previous decade. Whilst agriculture received an earlier start in Canada the real growth of industry in the Dominion has taken place in the past twenty years, following the success of farming development and the increasing needs of the country.

The figures of the 1921 census very clearly illustrate the development of Western Canada in the same period at a rate out of all proportion to other sections of the Dominion. After showing the leading increases at the 1911 census, they led again in 1921 by a wide margin, Alberta having increased its population by 57.22 per cent. in the decade, Saskatchewan by 53.80, British Columbia by 33.66, and Manitoba by 32.23 per cent. The three Prairie Provinces in the ten-year period increased their population from 1,720,183 to 2,480,664, by 760,481, or more than 44 per cent. In this prime agricultural area in the past ten years the rural population increased by 47.52 per cent and the urban by

48.48 per cent., showing that even in this area there are other important factors besides wheat and cattle.

With the exceptions of the provinces of Ontario and Quebec, which have been developing at a rapid rate as the industrial areas of the Dominion, all the provinces have in varying proportions a superiority of rural residents over urban. The balance of population throughout the country is, in fact, a satisfactory one as indicating the continued supremacy of farming over all other activities combined with, at the same time, a maintenance of healthy progress along the lines of manufacturing in which the Dominion is making only a less strenuous bid for national importance.

Exploiting New Quebec

The provincial government of Quebec is taking steps for the organization of an expedition into the Ungava territory, or as it should now be known, New Quebec, the first object of which will be the establishment of a series of posts or stations from which later on the great task of exploring the region and gathering information regarding its topography, rivers and streams, resources of timber and minerals, will be carried on. An innovation in Canadian exploratory work will be the introduction of wireless telephony, a system of communication which, from the outset, will eliminate many of the inconveniences and hardships of the pioneer work. The advance party will go out during the summer and establish a base of operations at Hamilton Inlet on the coast of Labrador.

It is just ten years since the boundaries of Quebec Province were extended to take in the territory of Ungava, which lay immediately north of the province, embracing all the mainland with the exception of the north-east coast, which, under the name of Labrador, fell to the jurisdiction of Newfoundland. The territory thus transferred in 1912 from the Federal government to Quebec comprised some 351,780 square miles, which gave Quebec a total area of 703,653 square miles, making it by far the largest province of the Dominion.

As Yet an Undiscovered District

Ungava, or New Quebec, is yet to all intents and purposes an undiscovered country, such fragmentary and meagre information as is available being the result of exploration of a most rudimentary character. Except for white settlements along the Gulf of St. Lawrence and on the Atlantic coast, and a few whites employed by the Hudson's Bay Company, the entire inhabitants are either Indians or Eskimos. The territory of New Quebec has a population of about 14,300, of whom 3,500 are Indians and 2,000 Eskimos. The white population is chiefly French-Canadian, obtaining a livelihood mainly from the coast fisheries, which is supplemented by hunting and trapping in the winter months.

Sufficient information is, however, available to indicate this territory's possession of a great wealth of natural resources of many kinds, and this it is which has decided the provincial government upon its commercial penetration. Topographically the country is profusely dotted with thousands of lakes, hundreds of which have surface areas of from twenty to one hundred square miles. These are connected by a veritable network of rivers and streams, forming an unexcelled system of transportation in which portaging is practically unknown. These routes are rich in water-powers, which will add considerably to the province's already tremendous aggregate in this regard. Climatically the temperature ranges from cold temperate on the southern coasts to Arctic on Hudson Strait, and it is

generally so rigorous that it is doubtful if the country will ever be fit for agriculture, though the soil is generally a rich mixture of sand and clay.

Forest and Mineral Wealth

Forest is continuous over the southern part of the peninsula, though north the region is treeless, woods being only found about the margins of small lakes or in the valleys of rivers. The range of the various trees depends on many factors, but the following are found in large quantities in the southern area:—birch, aspen, balsam, poplar, cedar, Jack-pine, white spruce, black spruce, fir and tamarac. Though hardly a commercial asset at the present time, these constitute a valuable possession, and in the future the trees of the more favorable portions will be profitably worked into lumber and also provide material for pulp and paper mills.

The merest observation has disclosed indications of a great hidden mineral wealth, and that this has already attracted widespread attention is evident from the fact that several mining experts backed by British capital have gone up into that territory this summer to make surveys and prospect. It is thought that gold probably occurs in many quartz-veins which have been encountered. Silver has been found associated with lead and occurring in quantities of economic value in bunches of galena. Occurrences of copper-pyrites are reported as fairly common. There are immense deposits of magnetite, hematite, and siderite in widespread distribution, which it is considered will be of great economic importance at a future date. Mica occurs frequently. Ornamental stones of many varieties are found over the area. Limestones, considered excellent for building purposes, are known as well as cement rocks and grindstones.

Fish and Fur Abundant

Practically all the numerous lakes of the territory are stocked with food fishes, of large size and superior quality, including lake and brook trout, land-locked and sea-run salmon, whitefish, pike, pickerel, suckers and ling. Cod is taken off the coasts in large quantities and salmon is plentiful in the coast waters.

One of the outstanding resources of New Quebec is fur, an asset of which a comparatively small toll is yet taken. Probably more valuable fur-bearing animals are to be found in this area than other sections of Northern Canada, because included in the species are the purely Arctic and pelagic types. Animals found extensively there include the lynx, wolf, Arctic wolf, red, cross black and silver fox, marten, fisher, weasel, mink, wolverine, otter, black and polar bear, walrus and many species of seal. Small bands of reindeer are to be found, whilst cariboo range unmolested, suggesting the establishment of further ranching enterprises of these two valuable animals.

The work being undertaken by the Quebec Government is of purely a preliminary nature with the object of subsequently having on hand reliable data on the territory's assets as soon as exploitation is considered justified. The merest cursory observations leave no doubt as to the immense wealth of New Quebec, and it is merely a matter of time before the furnishing of adequate transportation facilities and the introduction of capital will bring about a development productive of as much and varied a wealth as any other area of the Dominion.

Land of Home Owners

Probably the most dominant of man's instinctive desires is to own his place of residence. Perfect contentment and satisfaction do not become the lot of the farmer until he is sole owner of the land he yearly tills and until the harvest he garners is wholly his. So it is the first of all aims among city dwellers to purchase

a house which shall be for them a sure haven, and the accomplishment of this becomes the prime object of such monies as can be set aside from the contents of the weekly pay envelope.

Just as Canada is a land of farm owners, where the tenant farmer is practically unknown, so is the Dominion a country where city dwellers very largely own the property they reside upon. If prosperity is to any extent to be gauged from the extent of home possession, which is usually the prime aim of human acquisition, then Canada is a land of prosperous and civic urban population. A comparison between Canada and the United States, for instance, shows the Dominion to be in at least as desirable a situation in the matter of individual home ownership as the richer and greater republic.

London, Ontario, leads in Home Owners

Statistics carefully compiled in the United States reveal the fact that 45.6 per cent of the people of that country own their own homes and that 54.4 per cent live in rented quarters. The same statistics are not available for Canada, but for the purposes of a rude comparison figures have been secured on the ten most populous cities of the Dominion, and it is found that 35 per cent in these are owners of their own homes. When it is considered that the remainder of the country comprises agricultural land and the smaller towns and villages, and that the tendency is for a larger proportion of home owners the smaller the settlement, it will readily be conceded that the percentage for the entire Dominion must be higher than that of the United States.

Taking only Canada's larger centres of population, these are found to possess a greater proportion of home owners than the corresponding centres of the United States, though, in justice, the great disparity in population must be considered. London, Ontario, leads the Dominion with 80 per cent of its population owning their own homes. Hamilton and Calgary have 60 per cent of their people living in homes they own. The city of Toronto has a fine record for—the second most populous city of the Dominion—it has 55 per cent of its people living in homes owned by them. Fifty-one per cent of the people of Halifax are home owners. Vancouver, the fourth Canadian city in population, is another fine example of home ownership with 46 per cent of its people home owning. Edmonton falls slightly behind with 45 per cent, and Winnipeg, Canada's third city, just after this with 44 per cent. Ottawa has 40 per cent of its population owning their own homes, and Montreal, the first city of the Dominion, has a scant 5 per cent, pulling the average of the ten cities down to 35 per cent when it might have been more than 50 per cent.

Des Moines and Grand Rapids Lead

The ten cities taken for matter of record range in their numbers of residences from 9,000 to 134,000. Of seventy-two United States cities, with a population of 100,000 or more, only two, Des Moines and Grand Rapids, can boast a fifty per cent proportion of home owners. Des Moines stands at the top of the list with 51.1 per cent, and the remainder of the list tapers off from that point down to 12.7 per cent for New York city. With a few notable exceptions the experience of the United States has been for the larger cities to have a proportionately smaller number of home owners. Of the Canadian cities noted, most are below the hundred thousand mark, and the poor showing made by Montreal might indicate the same trend in Canada. In the case of Montreal, however, many dwellings classified as being occupied by tenants are in reality three-flat houses, one floor of which is occupied by the proprietor and the other two flats leased.

The Canadian record, on the whole, as indicated by merely the Dominion's largest centres of population, is a very gratifying one. It is one that is extremely encouraging to those contemplating establishment within civic or urban centres, the possibility of rapidly owning one's own home being an added inducement. The situation is accounted for, of course, by the relatively low prices of land which prevail over the Dominion which renders conditions similar in the cases of farm land and industrial establishment. This is rapidly changing with the development of the country, and each year sees a considerable increment in the value of city, farm, or industrial property.

Active Mining Season

In every province in Canada, prospectors, with outfits overhauled, grubstaked for the season, have set out in hope and expectancy for the mineral producing zones of the interior. Gold and silver mines, for the most part, are operating to their limit of output, and it may be said with conservatism that Canada has never experienced a season of such general mining activity in the gold and silver fields, with portents for valuable discovery or prospects more propitious for voluminous production. This is generally true of every precious metal mineral area from coast to coast and comes as most gratifying after the depression of last year. Copper is still quiet, lead and zinc brisk, iron and steel and asbestos picking up.

On the Pacific coast a season of exceptional activity is promised, particularly in gold mining. Placer mining is experiencing a mild boom in British Columbia and expectations are centred in the newly discovered Cedar Creek district of the Cariboo, where it is hoped that development will fulfill expectations. The new schedule issued by the Consolidated Mining & Smelting Co., and especially the steady operation of its custom lead, zinc and silver smelters at Trail, will doubtless lead to the opening up of many properties in the Slocan and Ainsworth districts. The Consolidated is building a 1,500-ton mill at Kimberly, B.C. The report of the finding of radium-bearing mineral in the Queen Charlotte group of islands has already resulted in the staking of numerous claims, and in all

probability exploration and development will take place during the summer. The Premier Mine in Northern B.C. is giving Hollinger a run for first place as Canada's biggest gold producer.

Coal and Oil in Alberta

In Alberta, the province that has wrested the leadership of the Dominion as a coal producer, indications are for a substantially increased output, last winter's production materially surpassing that of the previous winter despite strikes and other troubles. The search for gold has enlisted a greater interest than has ever previously been directed to it in this province. A suction dredge is being placed on the Peace River, where miners, working on the river bars, are reported to have made as much as \$20 a day last year.

Oil prospecting and drilling is being vigorously prosecuted, actual drilling taking place on the Canadian side, from just north of the newly discovered Montana well at Kelvin, Montana, to Fort Norman in the North, a distance of more than a thousand miles. The Imperial Oil Co. has encountered a heavy flow of gas (late in June) at 1,870 feet in their well at Fabyan, north of Hardisty, Central Alberta. Only a slight showing of heavy black oil, similar to that encountered in the wells drilled in the Viking district, is yet noticeable, sufficiently encouraging, however, to decide a continuance of drilling. The recent bringing into production of the two wells in Northern Montana, the Kelvin and the Sunburst, the latter only twelve miles from the Canadian boundary, gives additional hopes of prospects in the Southern and Central Alberta fields. It is the opinion of the geologists that the structure on which the Montana wells are located dips under Alberta.

Incorporation of Additional Oil Companies

The past months have seen the incorporation of additional companies to engage in oil drilling in various sections of the province. Investigations into the commercial treatment of the bituminous sands of the Athabasca region are being ceaselessly carried on by the Council for Scientific and Industrial Research as well as by private enterprise. Several carloads of the raw material have been shipped to England for experimentation by certain interests who claim to have perfected a system of separation and will spend a large sum in the initial work this summer.

In Northern Manitoba, general prospecting and diamond drilling in the mineralized regions of The Pas is being carried on steadily with the prospect of considerably developing the area as a producing field. Activity here is extensive, and never before in the history of the district have so many prominent mining companies interested themselves in it. Faith in its potentialities is wide-spread, and in addition to American and Canadian interest, English development companies have been floated and much capital subscribed to existing companies. During the spring, 240 claims were recorded at The Pas, making the total number of claims staked in the fiscal year, 813.

Activity in Ontario and Quebec

In Northern Ontario conditions could hardly be brighter and the gold mines are steadily producing at a rate which will probably create a record for the region by the end of the year. Attention has recently been directed to newly discovered gold areas along the main line of the Canadian Pacific Railway's Lake Superior District, which has resulted in a general staking of claims, and further developments will be watched with interest. The nickel and silver mining districts are facing somewhat brighter prospects this year.

The mineral areas of Northern Quebec are experiencing a large amount of prospecting this summer. A number of claims have been staked in the region east of the Larder Lake district and a Montreal company is reported to be undertaking gold prospecting there. The mineralized region of Chibougamau Lake, 165 miles north of Lake St.

John, is attracting attention, and a syndicate is spending a large sum this year in prospecting there. There is evidence of renewed interest in Canada's molybdenite areas. A party under a British mining expert has gone prospecting in Ungava.

Affairs in Nova Scotia

In spite of the turmoil and disturbance that seem to engulf mining affairs in Nova Scotia, there are beams of light in the darkness, evidencing the prospects of summer development in certain lines of mining activity. Optimistic reports are heard in regard to Malagash salt deposits. Prospecting is also being continued for other salt possibilities, and, so far, nine natural brine springs have been located. A prospectors' syndicate has been formed by people in Sydney to prospect in Cape Breton.

Very recently an important coal discovery has been made near Kennebunk on the Dominion Atlantic Railway, where indications of a ten-foot seam of high grade bituminous have been proved by the diamond drill. Drilling in this new field is being vigorously continued.

Mining prospects in Canada are possibly brighter than the early summer's prospect has held for years in spite of the various dark clouds which have enshrouded the industry since the beginning of the year. This comes as most gratifying after 1921's record of declining output, and is an indication of a resumption of normal mining activity which the aftermath of the war so rudely interrupted. The year 1922 should show a healthy production of practically all Canadian minerals.

Canada's Tree Seed for Britain

By F. C. C. Lynch, Supt. Natural Resources Intelligence Branch, Dept. of Interior, Ottawa.

Thousands of great sacks—to be exact, about 7,000—of the cones of the Douglas fir, Sitka spruce, hemlock and other species of trees were last autumn brought in by rail, by steamer and by farmer's wagon and dumped down on the big floors of a three-storey building in New Westminster, the seed extraction plant of the Forestry Branch of the Department of the Interior. It was erected specially for this purpose and is one of the most modern plants of the kind.

Here the cones were dried and threshed and the tree seed cleaned and bagged for shipment. From the 7,000 sacks of cones somewhat over 12,000 pounds of tree seed was extracted. As tree seed runs from fifty thousand to four hundred thousand kernels to the pound, with an average, perhaps, of two hundred thousand, it is evident that, if all these germinate, a good sized forest will result.

The largest purchaser of this seed was the Forestry Commission of Great Britain, which took over 7,000 pounds, the last of the order being shipped early this spring. The seed is to reforest the areas cut over during the war and to plant up such other areas as a survey of the British Isles has shown can be more profitably devoted to trees than to any other crop.

Tests have shown that a number of Canadian trees, especially Douglas fir and Sitka spruce, do well in Great Britain, which is the reason for the request from the British Forestry Commission to the Dominion Forestry Branch to secure for them a large quantity of seed annually.

Shipments of seed from the New Westminster plant were also made to Australia, New Zealand, Tasmania and other parts of the world, and some to the different provinces of Canada as well as to associations or individuals in the United States, Belgium, France, Sweden, Norway, Finland and Peru. The great increase in reforestation work throughout the Empire, of which this seed collection is evidence, is due to the lessons taught by the war.

Canada has some of the finest timber in the world, and this collection, extraction and distribution of seed is a benefit both to the Empire and to the Dominion. It opens a new line of activity and enables governments and individuals to secure seed in sufficient quantities to carry out worth-while plans of reforestation.

1922 A Building Year

Since the beginning of the year, Canada has experienced a distinct revival in the building industry after a virtual stagnation which existed throughout the war years and into the post-war era. Prices of building materials as well as the high cost of labor seriously curtailed construction of all kinds, and confined it to such as was absolutely necessary. With the establishment of a new level in the price of material and the readjustment of the cost of labor a decided impetus was given to the building industry from the opening of the building season. There has been unsurpassed activity, and the figures for the first six months indicate the accomplishment of a volume of construction unequalled in any year since 1914.

For the first six months of the year 1922, building permits in Canada had an aggregate value of \$132,452,000 as compared with \$111,763,500 in the first half of 1921, \$144,747,100 in 1920 and \$78,118,300 in 1919. In 1922 the Province of Ontario accounted for \$74,586,900 of the total permit value; Quebec \$31,294,200; the Maritime provinces \$5,521,700; and the Western provinces \$21,049,200. Of the total, the sum of \$53,435,300 is accounted for by residential building; \$39,660,900 by business construction; \$10,050,700 in industrial erections; and \$29,305,100 in engineering construction.

An Increase of Over Twenty Million.

Compared with the year 1921, the total value of permits throughout Canada shows an increase of \$20,688,500 over the value of the same period. In Ontario the value of construction undertaken has practically doubled, and Toronto has led all Canadian cities in the building undertaken so far this year. The even distribution of the kinds of building undertaken is clearly illustrated in the figures for June 1922, the value of permits, \$35,620,400, being the second largest monthly figure since May, 1914. Of the total, residential building accounted for 36.4

per cent; business, 29.1 per cent; industrial, 13.8 per cent; and public works and utilities, 20.7 per cent. The amount of contemplated new work throughout the Dominion at the end of June was \$26,117,400.

The buildings undertaken during the first six months, from coast to coast, are summarized as follows:—69 apartments, 95 churches, 124 factories, 195 public garages, 23 hospitals, 54 hotels, 103 office buildings, 46 public buildings, 10,725 residences, 243 schools, 823 stores, 24 theatres, 88 warehouses, 79 bridges, 19 dams and wharves, 103 sewers and water mains, 161 roads and streets and 138 general engineering.

Activity is General.

The resumption of building in Canada is not confined to certain sections but is general, and exceptional construction activity is evidenced in all cities from coast to coast. According to the reports received from 56 Canadian cities there is a building increase of over 30 per cent in comparison with 1921. Quebec Province reports an increase of more than fifty per cent; and Saskatchewan shows an increase of more than 300 per cent. Montreal and Toronto, particularly the latter, have exceeded by a wide margin the value in permits for the same time last year. In Winnipeg the permits for the first six months of 1922 show an increase of practically \$1,000,000 over the corresponding period in 1921. In Calgary, for the same space of time, the million dollar mark was passed. Improvements are noted in Regina, Moose Jaw, Brandon, Lethbridge, Edmonton, and other western centres, as well as Halifax, Moncton, Sherbrooke, Westmount, Fort William, Kitchener, Oshawa, Peterborough, and other cities of the East. In construction already accomplished this year, the leading cities in order are Toronto, Montreal, Winnipeg, Hamilton, Windsor, Ottawa, Vancouver, Quebec, London, Saskatoon, Port Arthur and Calgary.

The resumption of building in Canada on a substantial scale, more so than perhaps any other factor, may be taken as an indication of the return of brighter and more settled times and a further emerging from post-war depression, for building in the Dominion is so indicative of progress and expansion that it has come to be a gauge which marks, in a fairly accurate manner, the trend of economic affairs; it estimates the status of business and reflects the prosperity of other industries. In a resumption of building is reflected the downward trend in the price of all materials used in building, and a decline in the cost of labor to a level closer approximating the pre-war level. More building is indicative of hope and of faith in the immediate future. No other disturbance of the years following the war caused such inconvenience and upheaval as the cessation of building, and, in view of all it portends, nothing is so gratifying as the return to a normal amount of construction.

Motion Picture Films

A print of each of the following films issued by this department is deposited with the representatives listed on the back page. These are available upon application for use by schools, theatres, clubs, societies, boards of trade, and other associations and organizations.

Homemaking by Irrigation.—Irrigation farming in Southern Alberta, the various operations and their results.

The Land of Promise.—Featuring the well-known agricultural section of Battleford, Saskatchewan.

Opportunity.—Illustrative of Western Canadian opportunity, more specifically in the district of Lloydminster, Alta.

Livestock and Dairying.—The fine status and remarkable progress of this industry in Western Canada picturized.

Taming the Last West.—Depicting the evolution of the Canadian West from buffalo range to a modern agricultural area.

The Sunny Side of Rural Life.—The farmer on holiday, showing that life in Western Canada is not all work.

The Evolution of a Grain of Wheat.—The life of wheat seed from the time it is sown until its progeny enters into the composition of a loaf of bread.

Apple Growing in Evangeline's Land.—Orchard cult in the region Longfellow's poem made famous.

The Apple Harvest of the Okanagan.—Gathering and shipping apples in the beautiful British Columbia valley.

Curing Fish in Nova Scotia.—Depicting the various phases of curing and smoking fish in the Maritimes.

The Canadian Sardine.—The sardine caught, canned and distributed.

Some Water Powers of Eastern Canada.—The beautiful and powerful waterpowers of the Eastern Canadian provinces.

The Silver Fox Industry of Canada.—The domestic ranching of silver foxes in Prince Edward Island.

New Homes Within the Empire.—The camera follows the progress of a British immigrant from the first awakened interest in Canada till when he settles on a Western farm.

Departmental Publications

Any of the following publications will be sent free on request.

The Prairie Provinces of Canada.—A descriptive statistical booklet on the provinces of Alberta, Saskatchewan and Manitoba, with full information on the opportunities for farming in the West.

Business and Industrial Opportunities in Western Canada.—Full listings of industries existing and business openings in the provinces of Western Ontario, Manitoba, Saskatchewan, Alberta and British Columbia.

Why Canada.—Reliable and comprehensive information for the United States manufacturer, showing the advantages of establishing his industry in Canada.

Canada's System of Government.—Canadian government briefly outlined to portray its democratic traits.

The Story of Canadian Nickel.—History of the nickel mining industry.

Canadian Oil Exploitation and Prospects.—An expert engineer's history of Canadian oil development and future possibilities.

Canadian Water Power Development.—Authoritative and exhaustive survey of water power reserves and possible development.

Education in Canada.—The wide scope of Canadian education depicted to show that a settler need have no apprehension in this regard.

A Canadian Grain Handling Plant.—How Canadian grain is stored and shipped. Authoritative article on Canadian elevators.

Value of a Settler to Canadian Railroads.—Computation from reliable statistics of a farming settler's revenue-producing worth to Canadian railroads.

Bituminous Sands of the Athabasca Region.—Description with known values, and possibilities of development of the widely known tar sands of Northern Alberta.

Water Powers of the Maritimes.—Authoritative article on the undeveloped power systems of the Eastern provinces.

Water Powers of Manitoba.—The water powers of this province dealt with exhaustively.

Oleomargarine.—History of oleomargarine in Canada and its future prospects.

Synopses of Natural Resources.—Pamphlets dealing briefly but concisely with Kaolin or China Clay, Oil Shales, Mica, Fluor-spar, Asbestos, Molybdenum, Magnesite, Fruit, Flax Fibre, Nickel, Coal, Clays, Salt, Copper, Zinc, Silver, Gold, Pyrites, Iron, Potash, Talc, Feldspar, Platinum, Phosphate (apatite), Manganese, Graphite, Cement, Barytes, Gypsum, Petroleum and Natural Gas, Corundum, Sulphates of Sodium and Magnesium, Fur, Fish, Peat, Mineral Waters, Building and Ornamental Stone, Flour Milling and Water Powers.

The Department of Colonization and Development

The Department of Colonization and Development has the following offices established in Canada, the United States, Great Britain and Europe, whose representatives, at any time, will be glad to furnish information regarding Canadian agricultural, industrial and commercial enterprises.

MONTREAL, P.Q.	H. C. P. CRESSWELL, Supt., 335 Windsor St. Station.
WINNIPEG, Man.	J. F. SWEETING, Industrial Agent, Canadian Pacific Railway.
CALGARY, Alta.	M. E. THORNTON, Supt. U.S. Agencies, Ninth Ave. and First St. East.
VANCOUVER, B.C.	E. J. SEMMENS, Travelling Industrial Agent, Canadian Pacific Railway.
NEW YORK, N.Y.	L. F. MOWREY, District Representative, C.P.R. Bldg., Madison Ave. at 44th St.
ST. PAUL, Minn.	J. N. K. MACALISTER, Dist. Representative, Hackney Bldg., 4th and Jackson Sts.
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SPOKANE, Wash.	R. C. BOSWORTH, Dist. Representative, 202 Exchange National Bank Bldg.
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SAN FRANCISCO, Cal.	C. A. VAN SCOY, Dist. Representative, 299 Monadnock Building.
LONDON, England	A. E. MOORE, Mgr., European Organization 62-65 Charing Cross, S.W.
BRUSSELS, Belgium	CHAS. DE MEY, Director for Brussels Canadian Pacific Railway, 98 Boulevard Adolphe Max.
ROTTERDAM, Holland	WM. VAN TOL, Colonization Manager, 42 Coolsingel.
CHRISTIANIA, Norway	PETER MYRVOLD, Special Agent, 4 Jernbanetorvet.
COPENHAGEN, Denmark	M. B. SORENSON, Colonization Agent, Amagertorv. 24.

or any agent of the Canadian Pacific Railway Company or Canadian Pacific Steamships, Ltd. in United States, Great Britain, or Europe.

A. B. CALDER,
ASSISTANT to the COMMISSIONER,

J. S. DENNIS,
CHIEF COMMISSIONER,

Ask the Canadian Pacific about Canada



Agricultural and Industrial Progress in Canada

A monthly review of Agricultural and Industrial progress in Canada, published by the Department of Colonization and Development of the Canadian Pacific Railway at Montreal, Canada.

VOL. 4—No. 9

MONTREAL

September, 1922

Vital Facts of Canada's Progress

MORE and more—like automobiles—nations are coming to require instrument boards to tell them, in these complex times, where and how they are running. Prudent persons who have invested funds in a certain country—or who may intend to do so—wish to keep tab of the really vital facts about that country's progress just as the driver of a car must be able to know at a glance his speed, the time, or whether his battery is charging or not, and so on.

In the case of a nation, however, it is, first of all, far from simple to determine just what are the most significant facts to watch, and, second, even when that is decided, the grain of important facts is usually so heavily overlaid with general statistical straw that only cranks and professional economists can afford to separate the two. The busy man falls back on the information that may or may not find room and may or not appear systematically in the crowded columns of his newspaper.

The "Investors' Index to Canadian Conditions," issued as a supplement to this bulletin, is intended to be of use in this situation. It is not by any means a complete "instrument board" for Canada, but it is a beginning.

Nor is it an attempt to elaborate on statistics, but, on the contrary, to simplify them by selecting the most significant groups, establishing each group in a simple chart and presenting methodically the complete set of charts thus created month after month, each month with the tell-tale lines extended and raised or lowered so as to show the effect on the latest

figures. Thus, although each chart may on first acquaintance require a moment's study, it becomes like the dial of a clock, yielding its information to the intelligence in a single glance. A minimum of explanatory text accompanies each group of charts. The questions which the Index will answer are few—but important:—

What is Canada's Government "earning" and spending? What does it owe?

What was the amount of Canada's foreign purchases and sales for the month with particulars in the case of her two principal neighbors, the United States and the United Kingdom?

What was the American dollar worth in Canada? And the pound sterling?

How are the various main divisions of Canada developing in comparison with one another—as indicated by the percentage increase or decrease in building, bank clearings and commercial failures?

How are the principal cities comparing with one another in the same three respects?

What are Canadians saving in or borrowing from their banks?

How do Canada's note issues (Government and bank, respectively) compare with the gold held against those notes?

What is the proportion of quick and liquid assets as against the Total Liabilities to the public of Canada's banks?

How does the volume of business on the railways—as indicated by tons hauled one mile (revenue freight only)—stand?

What are all Canadian Railways earning?

What is the Canadian Pacific Railway Co. earning?

The Index will be issued monthly. Each number will contain everything of importance

A BUMPER HARVEST

Government Crop Estimate

	1921	1922	Increase
Wheat.....	300,858,100 bu.	320,968,000	20,109,900
Oats.....	426,232,900 "	509,752,000	83,519,100
Barley.....	59,709,100 "	64,881,000	4,171,900
Rye.....	21,455,260 "	37,848,000	16,392,740
Flax.....	4,111,800 "	4,530,000	418,200
Hay and Clover	9,930,000 tons	15,545,000	5,615,000

Agricultural & Industrial Progress in Canada

Published Monthly. Free on request.

It will be appreciated by the Department if editors and writers using matter from this Bulletin will quote source.

Norman S. Rankin, *Editor of Publications.*

E. L. Chicanot, *Asst. Editor.*

from the previous number plus the newly amended lines.

The statistics are all Government figures except where other dependable authorities are referred to in the explanatory text.

General Agricultural Situation

By J. Dougall and T. S. Acheson, General Agricultural Agents, C.P.R., Eastern and Western Lines.

Harvesting conditions throughout Canada during the month of August were, on the whole, satisfactory. Weather conditions have been somewhat unsettled, resulting in threshing and cutting operations being delayed to some extent. No damage is reported so far. The previous estimates of a good crop throughout the Dominion are substantiated by reports received from all points. The district in the northern part of Saskatchewan and Alberta which was short of moisture in the early part of the month received welcome rains, and crops which looked as though they would produce little are now estimated to give a fair yield.

It is difficult at this time to give a fair average of the crop, as threshing has not advanced sufficiently, but the Federal Bureau of Statistics gives the following bushel estimate of the crop for the three Prairie Provinces: Wheat 297,781,000 (280,098,000); oats, 304,869,000 (284,147,500); barley, 45,473,000 (44,681,600); rye, 35,073,000 (19,109,700); flaxseed, 4,360,000 (3,945,700).

Manitoba—Wheat, 53,444,000 (39,054,000); oats, 73,028,000 (49,442,500); barley, 24,534,000 (19,681,600); rye, 4,240,000 (3,564,700); flaxseed, 611,000 (544,700).

Saskatchewan—Wheat, 175,100,000 (188,000,000); oats, 154,669,000 (170,513,000); barley, 10,209,000 (13,343,000); rye, 27,893,000 (13,546,000); flaxseed, 3,561,000 (3,230,000).

Alberta—Wheat, 69,237,000 (53,044,000); oats, 77,172,000 (64,192,000); barley, 10,730,000 (11,657,000); rye, 2,940,000 (1,999,000); flaxseed, 188,000 (171,000).

The figures within brackets represent the finally estimated yields of 1921.

British Columbia—Generally speaking conditions continue to improve in so far as the apple crop is concerned. Other crops have also shown improvement due to rain.

Alberta—Threshing is in full swing throughout the province. Rains have fallen during the latter part of the month in the Northern districts, which have materially improved the outlook. The feed situation is also much better.

Saskatchewan—Late crops are coming along splendidly. Threshing is general, many districts reporting operations

completed. Generally speaking the crop has turned out satisfactorily. The Provincial Department of Agriculture in its latest crop report gives the average yield of wheat as 20 bushels per acre.

Manitoba—Weather conditions have been uncertain and rains have delayed threshing operations, but on the whole the crop is coming along very well. So far samples show good, clean crop.

Ontario—Harvesting operations in Ontario are about complete. The crop has been the most satisfactory for years. The fruit districts also report good yields, the apple crop being above the average.

Quebec—Harvesting has been more or less delayed during the month owing to inclement weather, but no damage reported to date.

Maritime Provinces—Reports from these provinces indicate that all crops are doing well, and while reports of "misses" in the potato crop are recorded, yet generally speaking conditions are satisfactory.

Quebec's Colonization Scheme

In 1920 the government of the Province of Quebec set aside the sum of five million dollars for the purposes of colonization and it is already setting about the expenditure of this money and making a serious bid for settlers on its rich unproductive tracts. Believing from its past experience that in the work of colonizing new lands there must be a certain amount of preparatory work so that the settler avoids the rigors and hardships of pioneering and is in a position to become productive and of greater value to the province in a much shorter time, the provincial government is blazing the way for the settlers who will occupy the lands in the spring of 1923.

This preparatory work surpasses the already generous arrangements of the government in its encouragement of agriculture in the province. Some millions of acres of farm lands have been set aside for the use of farming settlers which the government will sell to such at a minimum price of from 20c. to 60c. per acre. A few very easy conditions are imposed upon the purchaser in order to assure cultivation of the land. It is not sufficient to merely work the land; it must be cultivated according to the most approved methods. To ensure this the government has established schools of agriculture, co-operative societies, experimental stations, demonstration fields and farmers' clubs, and has expended nearly a billion dollars in agricultural subsidies. Not only does the provincial government sell its land at very low prices, but it does everything possible to improve it, providing for the construction of roads, bridges and other public works.

The Beautiful Matapedia Valley

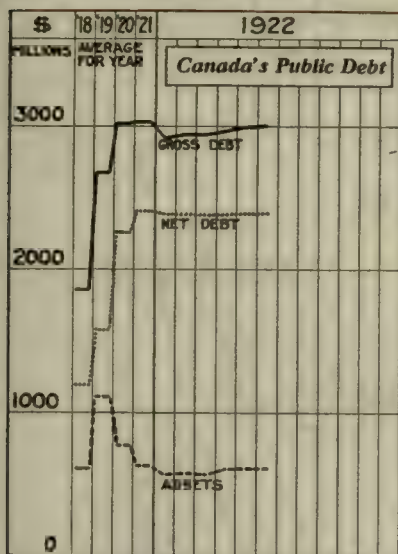
The new colonization project, however, goes further than this. It has regard to the Canton of Langis, in the Matapedia Valley, in the Gaspé peninsula, just north of the territory of New Brunswick. The valley of the Matapedia, a river which flows from a lake of the same name



Investors' Index of Canadian Conditions

SEPTEMBER, 1922

A permanent group of Charts on Key Statistics brought up to date and issued monthly by the Department of Colonization and Development, Canadian Pacific Railway, Montreal.



Government's Financial Position

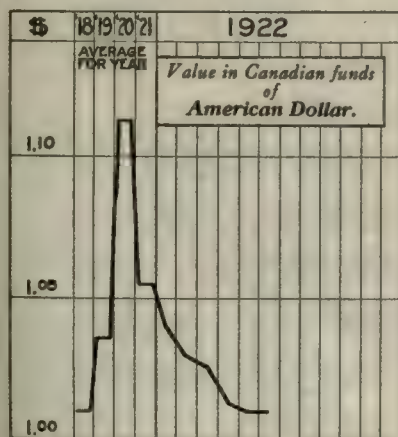
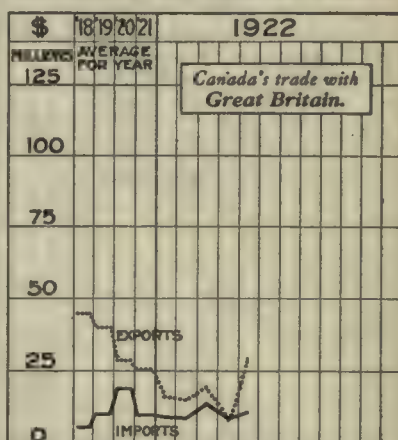
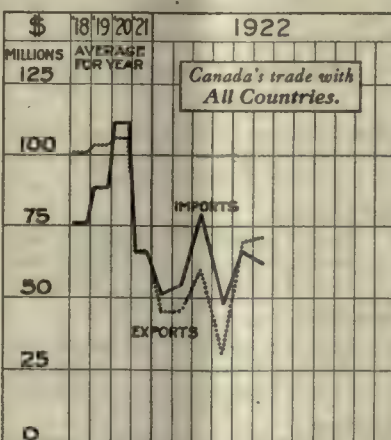
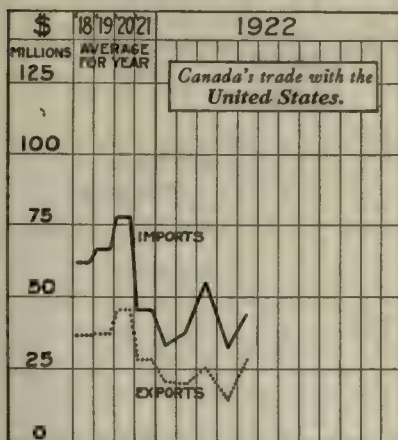
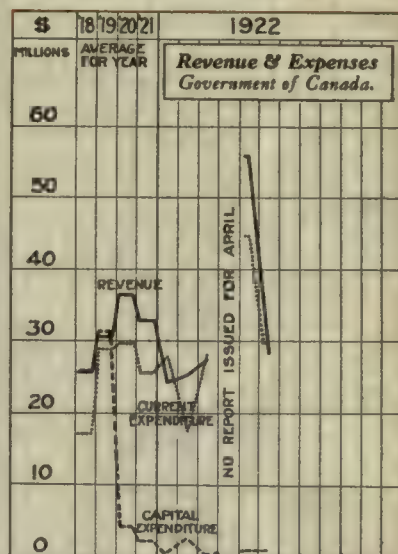
as reported for June

Gross National Debt .. \$3,006,000,000
"Assets" 609,000,000
Net National Debt .. 2,397,000,000

Revenue for June .. \$ 28,500,000
Expenditure—
Current Account .. 29,800,000
Capital Account .. 1,600,000

Canada's Net Debt was increased slightly by the month's excess of Expenditures over Revenue. The tendency, however, is wholesome. The new stamp tax revenues are reported to be yielding heavy revenue. These figures are not yet available.

Revenue and Expenses reported for May always include April, for which the Government makes no separate report.



Canada's Foreign Trade

as reported for May with world totals for June

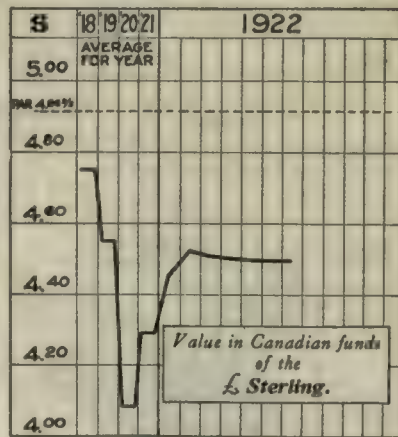
Total Imports \$61,700,000
Total Exports 71,800,000
U.S.: Imports from .. 44,100,000
" Exports to .. 28,800,000
Gt. Britain: Imports from 11,300,000
" " Exports to .. 29,200,000

Average value in Canadian Funds of £ Sterling \$4.49; American Dollar \$1.01.

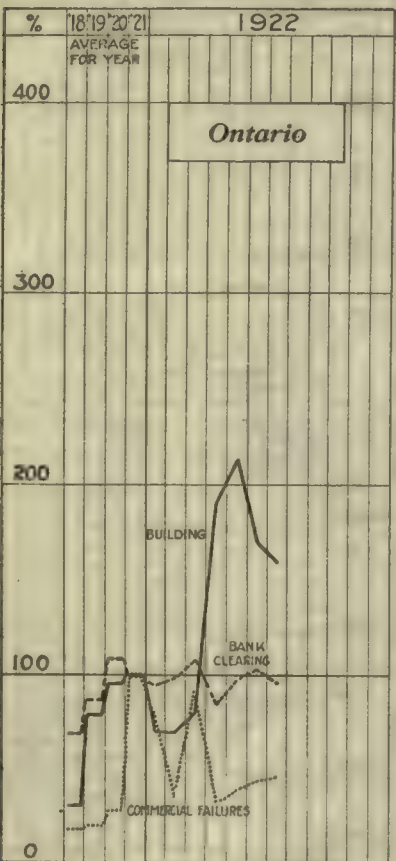
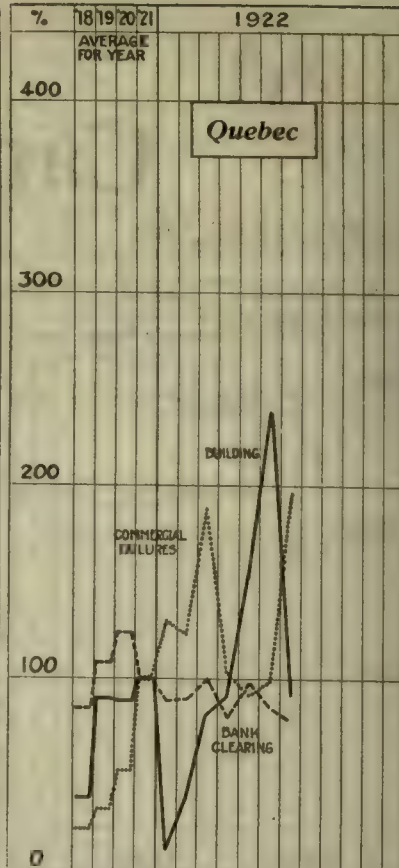
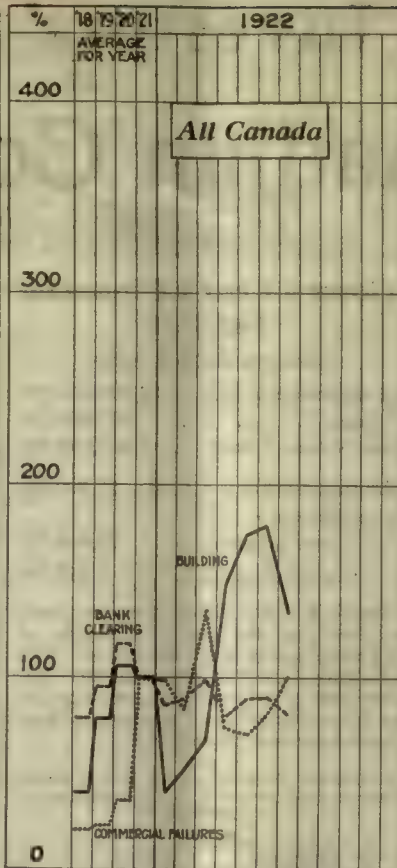
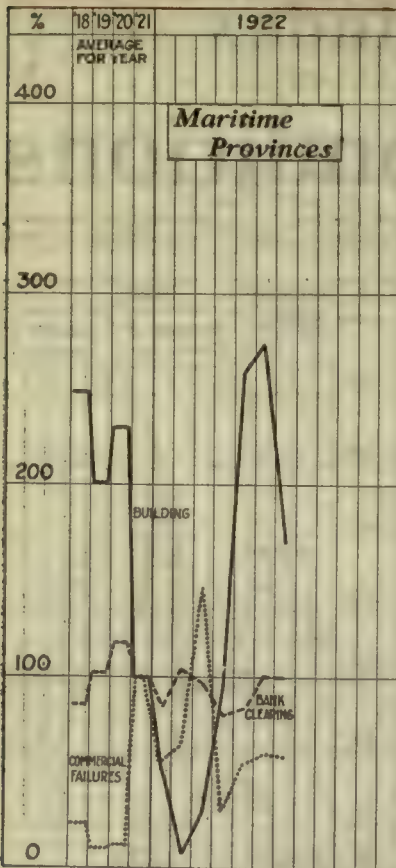
Imports—Imports for Consumption in Canada.
Exports—Exports of Canadian produce only.

The figures showing Canada's Total Trade are issued by the Department of Customs and are a month in advance of the Trade by Countries from the Dominion Bureau of Statistics.

Exchange figures are monthly averages supplied by the Bank of Montreal.



INVESTORS' INDEX OF CANADIAN CONDITIONS



District Conditions

As indicated by
Bank Clearings, Building Construction
(contracts made) and Commercial Failures
(gross liabilities)

All Canada :

Bank Clearings .. \$1,299,027,442
Building Const. .. 26,694,200
Com. Failures .. 5,758,584

Maritime Provinces :

Bank Clearings .. \$ 33,233,100
Building Const. .. 1,318,300
Com. Failures .. 187,900

Quebec:

Bank Clearings .. \$ 424,680,776
Building Const. .. 4,724,000
Com. Failures .. 4,116,991

Ontario:

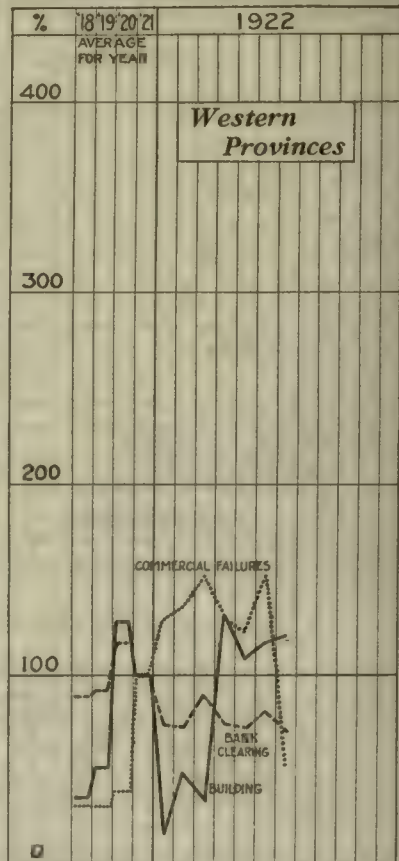
Bank Clearings .. \$ 536,665,422
Building Const. .. 15,033,700
Com. Failures .. 954,788

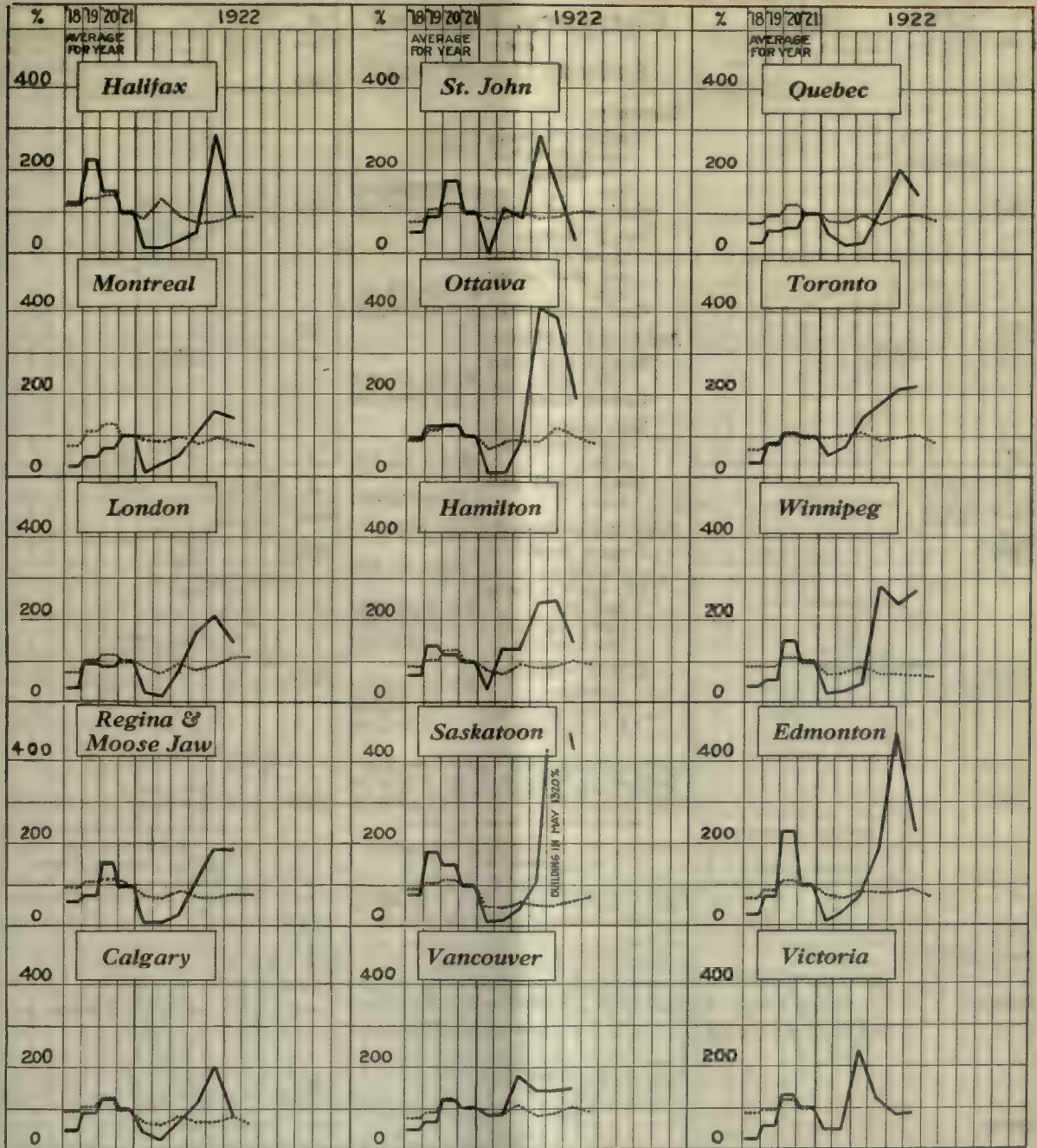
Western Provinces:

Bank Clearings .. \$ 304,448,144
Building Const. .. 5,618,200
Com. Failures .. 498,905

In the above charts the average monthly figure for the last completed year (1921) has in each case been taken as 100; the monthly averages for previous years and the actual months figures for the current year are expressed as percentages below or above.

Building figures in these charts and those on page 3 opposite have been supplied by Messrs. The MacLean Daily Reports Ltd., figures on Commercial Failures by Messrs. R.G. Dun & Co.





Conditions in Principal Cities

as indicated by

Bank Clearings (dotted lines) and Building Construction (black lines)

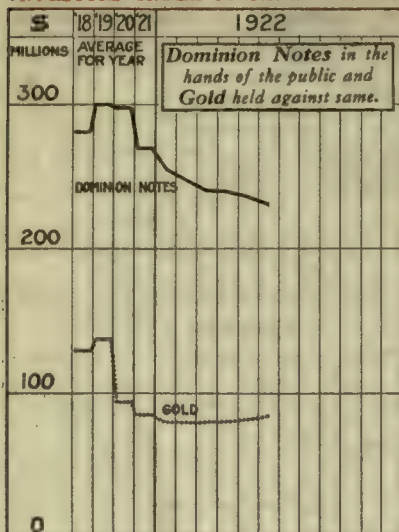
Halifax:		
Bank Clearings..	\$14,150,138	
Building Construction..	183,330	
St. John:		
Bank Clearings..	\$13,277,663	
Building Construction..	15,000	
Quebec:		
Bank Clearings..	\$25,816,727	
Building Construction..	438,190	
Montreal:		
Bank Clearings..	\$304,742,099	
Building Construction..	2,558,977	
Ottawa:		
Bank Clearings..	\$30,021,784	
Building Construction..	422,800	
Toronto:		
Bank Clearings..	\$409,470,271	
Building Construction..	4,392,980	

London:		
Bank Clearings..	\$13,160,911	
Building Construction..	317,180	
Hamilton:		
Bank Clearings..	\$25,805,355	
Building Construction..	440,575	
Winnipeg:		
Bank Clearings..	\$164,055,741	
Building Construction..	1,249,000	
Regina & Moose Jaw:		
Bank Clearings..	\$18,623,563	
Building Construction..	430,792	
Saskatoon:		
Bank Clearings..	\$6,972,906	
Building Construction..	279,545	
Edmonton:		
Bank Clearings..	\$17,098,364	
Building Construction..	246,975	

Calgary:		
Bank Clearings..	\$19,322,303	
Building Construction..	161,400	
Vancouver:		
Bank Clearings..	\$56,681,711	
Building Construction..	384,530	
Victoria:		
Bank Clearings..	\$10,639,482	
Building Construction..	66,954	

Note—Owing to a doubt as to the accuracy of the Bank Clearings reported for Victoria for certain months, and pending verification, the line has not been filled in.

In the above charts the average monthly figure for the last completed year (1921) has in each case been taken as 100; the monthly averages for previous years and the actual months figures for the current year are expressed as percentages below or above.



Currency, Banking and Railway Conditions

Currency:

Dominion Notes in hands of Public (see chart upper left) .. \$ 232,700,000
Gold against same .. 85,500,000

Bank Notes in hands of Public (see chart upper right) .. \$ 166,100,000
Gold against same .. 91,500,000

Banking Conditions:

Savings (see chart centre left) .. \$1,181,400,000
Current Loans .. 1,117,800,000
Liabilities to Public (see chart centre right) .. \$2,381,000,000
Assets, Quick and Liquid .. 1,188,700,000

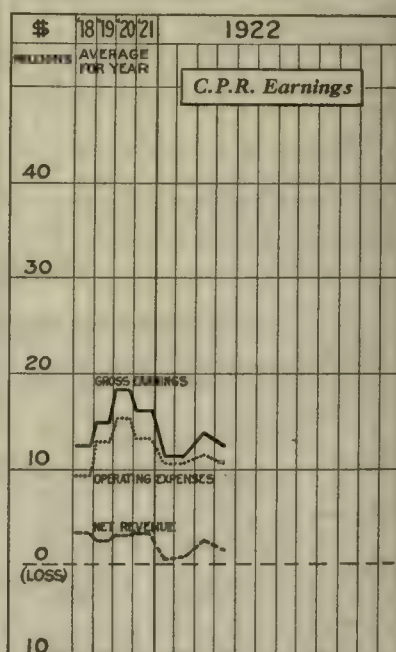
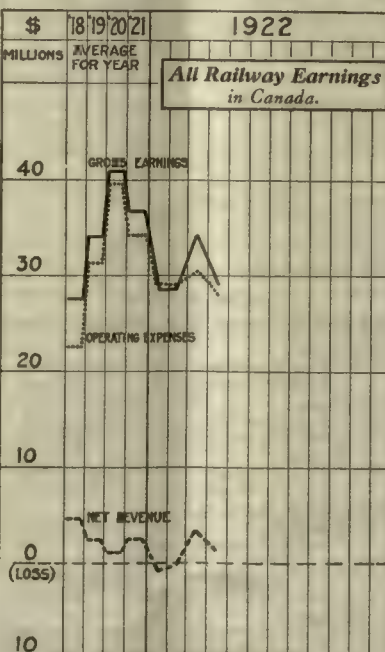
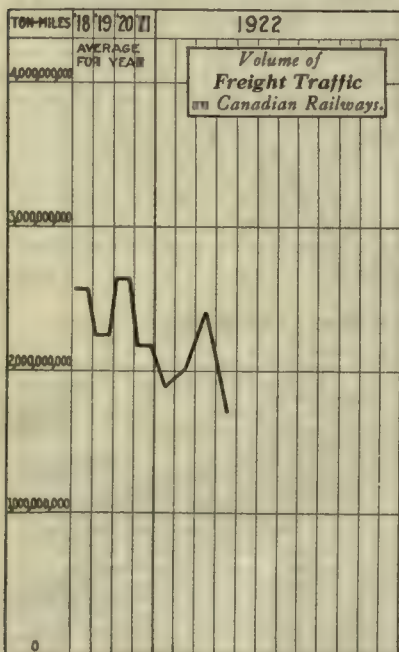
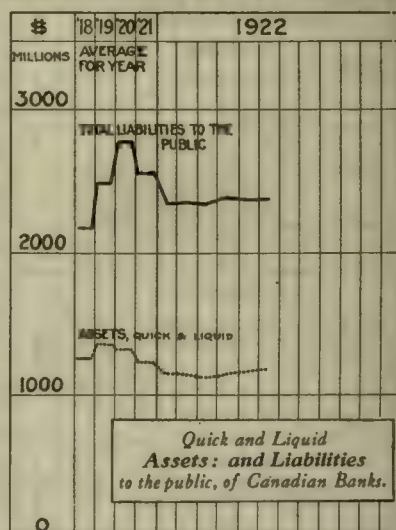
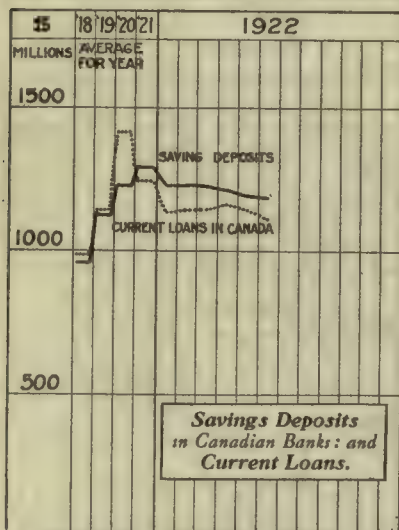
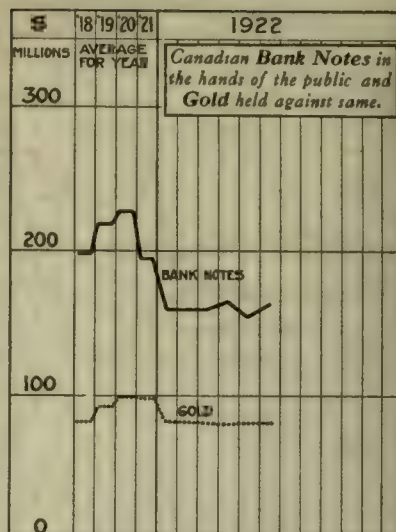
Railway Conditions (charts below):

Freight Traffic in ton miles .. 1,728,000,000
All roads—Gross Earnings .. \$ 29,320,000
Operating Exps. .. 28,000,000
Net Earnings .. 1,320,000
C. P. R.—Gross Earnings .. \$ 12,500,000
Operating Exps. .. 10,920,000
Net Earnings .. 1,580,000

Gold against Bank Notes is made up of three items: Specie held by Banks; Bank Note Redemption Fund in the hands of the Government; and the Gold, as distinguished from Dominion Notes deposited in the Central Gold Reserve.

Saving Deposits are Deposits repayment of which is subject to Notice.

"C.P.R. earnings" refers only to the earnings of the railway and does not include earnings of Hotels, Telegraphs, Ocean Steamships, etc.



near the St. Lawrence, into the Baie des Chaleurs, is one of surpassing beauty and fertility, which has already become famous among fishermen of the Eastern United States, who come there each year and have established club-houses there. Now an attempt is to be made to develop it agriculturally. The Matapedia may be classed as one of the greatest of valleys, according to authorities, a region of smiling meadows and high mountains, past which the river winds its way.

Here, in the Canton of Langis, a certain number of colonization lots have been surveyed and mapped out. Men are at work this summer clearing ten acres on each lot, and erecting on each potential farm a house costing about \$600 and a barn at a somewhat lower figure. As it is not intended to place any settlers on these lands until the spring of 1923, and the work is merely in process, it has not been determined what the exact cost to the settler will be, but on the authority of the provincial Minister of Colonization the settler will receive a farm at actual cost and the payments expected of him will be extended over thirty years. The province will safeguard itself against possible loss, and achieve the greatest amount of benefit for the province, by carefully selecting its colonists and placing them on the land with the best possible assurance of success.

A Steady Stream of Colonists

Quebec is receiving a steady little stream of new colonists in spite of the rush to newer opened areas, and she is making a bid for more in an endeavor to bring under cultivation the millions of fertile acres which she still possesses in a virgin state. The agricultural production of the province in 1921 accounted for a value of \$1,288,813,000, and included practically every farm crop imaginable, horses and cattle, sheep, swine, poultry, bees, field crops, potatoes and root crops, orchard and small fruits, dairy products, wool, eggs, tobacco and maple sugar and syrup. An endeavor is being made to lure back to the old home the French-Canadian population which was drawn away in less prosperous times, whilst at the same time attract the British and United States immigrant. Quebec's agricultural value has been proved by many years of farming which stand to assure the future of its new colonization tracts.

New Fame for Maritimes

The Maritime Provinces of Canada have quietly, and in their characteristically unostentatious way, attained a continental and international fame for the production of seed potatoes, and such is the favor with which the Maritime product is now regarded that, on the authority of the Minister of Agriculture of New Brunswick,

the outlook for the export of seed potatoes is this year more excellent than ever and the demand, in fact, greater than the available supply. This is based on authentic reports from the markets in the states of Washington, New Jersey, Delaware, Virginia and elsewhere.

The fame of the seed potatoes of New Brunswick and Prince Edward Island has rapidly spread, for it is only three years ago since the former province made the first shipment of between three and four carloads to the United States, whilst this year the demand is expected for over 250 cars. Prince Edward Island is expected to provide 125 cars for export to the same country, the province being unable to meet all the demands made upon it. The State of Virginia, through its Potato Growers' Association, has made a bid for the entire island crop this year.

The Maritime Provinces have long been favorably known for the quality of their potato crop, and the annual production of the area has steadily increased as this fame grew and the product was in greater demand. Canada steadily exports potatoes to the United Kingdom, United States, British Guiana, Cuba, British West Indies, St. Pierre and Miquelon and other countries, the greater part of which emanates from the Maritimes. For instance, Cuba is in the habit of importing from twenty to twenty-five thousand bushels of potatoes per week and a third of these have their origin in the Province of New Brunswick.

The popularity of seed potatoes is of much recent growth and originated in the superiority of the Maritime product, which became immediately apparent wherever introduced. They first penetrated the Eastern States, even the famed potato region of Aroostook in Maine acknowledging the better quality of the New Brunswick product by shipping in several carloads of the 1921 crop to ensure a supply of high quality disease-free seed. This popularity is rapidly spreading over a wider area, and of the 1921 crop of New Brunswick, twelve thousand barrels of choice Bliss seed potatoes were sent to Texas. In the same year sixty carloads, or 48,000 bushels, of certified seed potatoes were shipped out of Prince Edward Island to various parts of the United States.

Eastern Potato Seed in Demand

Long before the Maritime potatoes became favorably known abroad, farmers in other parts of Canada realized the benefits of securing their seed from the Coast Provinces. Quebec has, for some time, been in the habit of bringing in carloads of potatoes for seed purposes from the East each year, whilst the results achieved with Maritime seed in Ontario have to such an extent

exceeded what has been accomplished with seed from other quarters that it is now preferred throughout the whole province.

What the Maritimes have attained in popularity in this respect may be said to be the accomplishment of merely three years, and in view of this there should be a bright future ahead of this area in supplying the American continent with the seed for its potato crop. In a realization of its possibilities the area devoted to potatoes is being increased, New Brunswick being estimated to have planted 74,000 acres this year and Prince Edward Island 38,400 acres. The yield of potatoes doubled in New Brunswick between 1910 and 1921, whilst that of the Island also showed a substantial increase. An indication, if any were needed, of the remarkable adaptability of the climate and conditions of these provinces to potato growing, might be seen in the yields of the 1921 crop. New Brunswick topped all the Canadian provinces in average production with a yield of 216 $\frac{1}{4}$ bushels over all her area, and Prince Edward Island had an average of 162 bushels per acre.

The significance of this is to be realized in a comparison with the average Dominion production last year of 158 bushels per acre, or with the average of 1921 of the United States, which was less than 90 bushels to the acre and that of 1920 less than 110 bushels to the acre.

Apple By-Products in Annapolis Valley.

*By F. G. J. Comeau, Dist. Freight and Passenger Agent,
Dominion Atlantic Railway, Halifax.*

It is generally conceded that Nova Scotia possesses advantages, in many respects, for manufacturing such products as jams, jellies and analogous commodities of which the apple industry supplies the basic material, without equal in Canada.

The Annapolis Valley has on various occasions, in recent years, been visited by several Canadian and American manufacturers, attracted here by the publicity given our apple crops. These people had in mind the development of industries that would utilize the waste apples, the apple cores and peelings from the canning and evaporating factories, and the apple pomace from the cider and vinegar plants. Various sites were even picked out as more desirable than others, and in some instances boards of trade interested themselves to the extent of offering their good offices in obtaining, for the parties interested, tax exemption, free water, etc.

It is a well-known fact that large quantities of early apples and wind-falls which could very well be utilized in the manufacture of by-products are allowed, every year, to rot on the ground. Practically all these apples could be used in some form or other in the manufacture of some marketable article, and thus would be saved what to-day is looked upon as a worthless product.

The manufacture of cider and vinegar, from Annapolis Valley apples, has been done for some years past, on a comparatively large scale, at Bridgetown and Canning, and lately a new plant has been erected at Aylesford, in the very heart of the apple district. The brands of both cider and vinegar from these plants have been long known to the trade, and have enjoyed more than a Dominion-wide reputation. A ready sale has always greeted these goods on all markets, and even the British markets have absorbed a considerable proportion of the output.

Concentrated cider is another product of recent origin. It was first manufactured in 1920. In 1921 the quantity was largely increased. Where prohibition has compelled the use of milder brands of liquids, concentrated cider has found a ready market, and several of the Canadian provinces have given it a sympathetic reception. It is put up in bulk in wood, and also for convenience in tins in cases.

Utilization of Apple Waste

Apple waste, which included cores, peelings, chop and pomace, was, prior to the Great War, shipped from this province to England, France, Holland and Germany, where it was manufactured into various products, subsequently exported to the world's markets. The war and the adverse rate of exchange, together with the increased cost of transportation, forced our apple growers to seek other markets, which in post-war years have been found in Quebec, Ontario and New York State.

During the war activities the desiccating of vegetables, such as potatoes, turnips, carrots, etc., became an industry of considerable proportions, even here in Nova Scotia. These goods were needed in a concentrated form to feed the troops overseas. Their reduced bulk and weight made their use a necessity. The cessation of hostilities and withdrawal of forces from actual service seemed to have closed the markets for this class of food supply. There is no doubt, however, that desiccated vegetables prepared by the latest and most up-to-date method will again become an article of daily use, when the cost of production can be reduced to a reasonable figure.

It may be interesting to know that although the 1921 apple crop was the cleanest ever grown in the history of the Annapolis Valley apple industry, and the percentage of number 1's and 2's was the highest on record, there still were around 200,000 barrels of apples sent to evaporating and canning factories, and cider and vinegar mills, which from a market standpoint were considered of an inferior quality. The waste alone from these plants in 1921 totalled about 30 carloads, or 1,300 tons. Besides these shipments many tons were permitted to go to waste in various ways or were fed to pigs. Some authorities have made the statement that at least one barrel was wasted for every barrel marketed.

The total quantity of canned apples put up in the Annapolis Valley of the 1921 crop totalled, in round figures, over 80,000 cases of gallon apples. Cider and vinegar are figured in the hundreds of thousands of gallons, and evaporated apples run over one million pounds.

If a more extended growth of vegetables were encouraged in the valley, the plants now in operation during the Fall and early part of the Winter months, in the manufacture of such apple products as have been enumerated above, could very well be kept working during the balance of the year, and the help kept at work, at the same time decreasing the overhead by the continued operations. This business principle has already suggested itself to some of our manufacturers of apple products. The waste material exported prior to the war, and in recent years shipped to large Canadian and American centers, should, in the opinion of many, be manufactured nearer the source of supply, and dehydrated vegetables added to the list of factory products.

Jams, Jellies, Mince Meats, etc.

It has been suggested that jams, jellies, apple chop, mince-meats and preserves, of which, in most cases, the apple waste forms the base, could be manufactured at some central point in the Annapolis Valley to greater advantage than elsewhere, on account of the raw material being at its doors. Hydro-power now being developed at various points will supply the necessary cheap power which should make the proposition a financial success.

The possibilities for raising strawberries, raspberries, and blueberries in Nova Scotia are unsurpassed on the continent east of the Rocky Mountains. These could find an assured market in the event of factories being established here having for object the utilization of the by-products of the apple industry, and such other fruits as plums, etc.

An article that has considerable of a market in the United States is "Fried Potato Chips." These are put up in small cartons and are in large demand in towns and cities. With cheaper help in our country districts this article could no doubt be manufactured here much cheaper than in the States, and the Canadian trade could be supplied from Nova Scotia.

In 1921 a new method of extracting by-product from waste and otherwise useless apples, including the most intensely acid and worthless apples, which heretofore have been going to waste, was introduced in the Valley. From a simple process it was claimed that a syrup, which was pronounced eminently desirable as a basis for other concoctions, was produced. Calcium Malite, the same as is derived from maple syrup and known as Sugarsand, was produced by this process. Before the war, Germany bought this sugar sand extensively in Quebec at about six shillings or more per pound, as a source of Malic Acid. The process was tried in two evaporators and it was thought that it would lead to the development of an entirely new industry in the Annapolis Valley. If the process needs further research, no time should be lost in making the necessary investigations. The Dominion Laboratory at Annapolis has done much research work in this connection, and will spend all the time necessary to produce the required results.

An excellent line of high class confectionery has been manufactured and found a wide market in the Western Pacific apple districts of the U.S.A., made from apple juice, of which large quantities could be obtained from unmarketable apples in the Annapolis Valley.

It is time that the prosperous and progressive fruit farmers of this district took stock of the opportunities that lie ready to their hands for increasing their business and the productiveness of this beautiful valley and eliminating waste.

Wool Combing Industry Established

A move of great national importance, fraught with great significance to the future prosperity of the wool and textile industries of Canada, of marked consideration not only to agriculturists but the Canadian people at large, is the forging of what has long been a missing link in the chain of Canada's wool industries. Private enterprise has made it possible to erect a plant for the combing of the Canadian wool crop, and the Dominion Combing Mills, Ltd., at Trenton, Ontario, are nearly ready to commence operations. The company is capitalized at \$2,500,000, and the construction of the plant was only commenced after the architects had spent three weeks in going over many long established factories in Bradford, the English centre of the industry. All the machinery has been introduced from the same district.

In the past the wool raising industry of Canada has been largely handicapped through the absence of this link in its chain. Millions of dollars have been lost to Dominion farmers

because the one process necessary to the satisfactory marketing of their output has been lacking and the raw material has had to be exported at low rates instead of being prepared for the finishing process at home. It was not possible to sell the produce to the textile factories at home because it lacked treatment in an important process and manufacturers could not use it without being processed. The result has been that home textile factories had to import their finished raw material from abroad instead of getting it from the Canadian farmers, or those to whom they depute the task of handling their output.

Produced 22½ Million Pounds in 1922

Last year Canada produced over 22,500,000 pounds of raw wool. A large percentage of this was such that it had to be combed before it could be used in the worsted industry and therefore had to be exported. During the same period Canada imported from Australia, England and foreign countries over 7,000,000 pounds of tops, noils, etc., for the use of Canadian spinning mills. The new Canadian industry will produce the tops that are now being imported and the Dominion Combing Mills, Ltd., will have the honor of operating the first plant to put the wool through the highly necessary process for manufacture. The necessity for the home manufacture of their wool has been brought home to Canadian farmers as never before when through the new United States tariff they find themselves deprived of a market that heretofore bought combing wools because the United States had the plants when Canada had not; consequently, both farmers and manufacturers highly endorse the enterprise.

It is difficult to estimate the extent of the stimulus of the new establishment upon the woolen textile industry of Canada, which is already an important one. There are in all 94 plants engaged in the manufacture of woolen goods, woolen yarns and woolen felts in Canada, 66 being devoted to the first, 16 to the second and 12 to the third. The capital invested in woolen goods' establishments is \$22,783,128; in those of woolen yarns, \$6,428,991; and in wool felts, \$3,573,100. A total of 500 persons receiving over a million dollars in wages and salaries are engaged in the various branches. The production of the woolen goods plants is in excess of \$28,000,000 a year; that of woolen yarns, \$9,000,000; and of wool felts, \$3,500,000.

Britain Will Assist in Financing

The woolen trade in Great Britain is keenly alive to the importance of the Canadian industry as indicated by the fact that the Trades Facility Commission, a branch of the British Treasury formed for the purpose of assisting in financing industries that will promote trade within the

British Empire, has offered to assist in financing the Dominion Combing Mills to the extent of a loan of the cost of the machinery, for 10 years, if purchased in England. The opportunities for the expansion of the Canadian woolen textile industry are apparent when trade figures show that whilst Canada exports in excess of \$11,000,000 worth of wool and wool products, she imports more than \$120,000,000 worth. It is likewise learnt to the advantage of the Canadian combing plant and the textile manufacturing industry that should Canadian farmers be unable to supply the former plant with all the raw material it should require, Australian wool can be handled cheaper at Trenton by $\frac{1}{4}$ to $\frac{1}{2}$ a cent per pound than if landed at London, England.

There are limitless possibilities to the benefits the new industry can bring in its wake. Under the compulsion to sell their product in a foreign market, many Canadian farmers found it unprofitable to raise sheep. An adequate home market for wool should stimulate the growth of the herds all over the Dominion. This would indirectly help the packing houses which handle the carcasses and the tanneries which handle the hides. Inevitably it must tend to enhanced business, domestic and export, and bring in its train all the advantages which manufacturing a finished article at home has over exporting the raw product to be imported back in a manufactured state.

Maritime Iron and Steel Industry

The iron ore, coal, and fluxing materials which are found in abundance in the Maritime Provinces of Canada have given rise to the iron and steel industry of that area, which has developed to be the greatest of the Maritimes' industrial activities. The growth of the industry has been gradual but steady, and its history over the past hundred years has been one of progress towards giving the area signal renown in this regard. The annual production of this industry is about \$35,000,000 per year.

Nova Scotia has numerous deposits of iron ore of limited extent, some of which are of considerable value, but profitable only as they complement other sources of ore supply. In other necessary materials Nova Scotia is likewise well favored, there being plenty of limestone for flux in various parts of the province and several important coalfields. In New Brunswick several deposits of iron ore have been discovered, but the majority are as yet of little economic importance. As this province has not the coal resources of her sister province, the iron and steel industry is not so important as in Nova Scotia.

The Industry Dates to 1825

The Maritime steel industry had its small origin at the hands of English capitalists in 1825 when ore in Annapolis county was developed. Deposits at Stellarton, Woodstock and other places were subsequently developed by enterprising concerns, the industry on a whole passing through many vicissitudes and tribulations. The real history of the gigantic modern industry which exists to-day dates from 1909, when the Dominion Steel Corporation was formed by an amalgamation of the Dominion Iron and Steel Company and the Dominion Coal Company.

The greatest development in the Nova Scotia steel and iron industry was the formation in 1920 of the British Empire Steel Corporation with an authorized capital of \$500,000,000. This was a merger of the Dominion Steel Corporation, the Nova Scotia Steel and Coal Company and the Halifax Shipyards. Its effect was to centralize the control of all the large profitable coal areas of Nova Scotia, the iron ore deposits of Wabana, Newfoundland, and an adequate number of limestone quarries under one management. The corporation has approximately 37 collieries, with a combined yearly output of $6\frac{1}{2}$ million tons, or 93 per cent of the output of the whole province. The iron deposits of Wabana are practically inexhaustible. The Halifax Shipyards, located at one of Canada's most important ports, is an important user of steel products and heavy marine forgings, which the steel subsidiaries in the merger are equipped to provide.

Sydney the Steel Centre

Sydney, with \$150,000,000 invested in its industries, is the great centre of the Maritime steel industry. There are six blast furnaces with a combined capacity of 1,600 tons of pig iron daily, ten five-ton open hearth steel furnaces and other complete equipment. The output of the plant is in excess yearly of \$36,000,000. The plant at Sydney Mines comprises 150 coke ovens, two blast furnaces and other equipment sufficient for the continuous operation of one furnace producing 300 tons of pig-iron a day, five fifty-ton open hearth furnaces and complementary equipment. There is a manufacturing plant at Trenton for turning out forgings, car and locomotive axles, polished shafting and bars, industrial rails, railway plates and structural steel shapes. Adjoining this plant is one for turning out steel, wooden and composite cars, the present capacity of the plant being 25 steel frame box cars per day, which can easily be doubled.

The iron and steel industry of Nova Scotia is now concentrated under the management of one concern, owning its own mines of coal and iron ore, properties sufficiently large to enable production to be carried on for centuries. All

necessary raw materials are situated in Nova Scotia or Newfoundland, making a thoroughly self-contained industry, entirely British as to the origin of raw material and manufacture.

Canada's Tobacco Industry

Though tobacco has been successfully grown in the Okanagan Valley of British Columbia, on the irrigated lands of Southern Alberta, in Southern Manitoba, and on other sections of the Prairies, the only important tobacco producing areas of the Dominion are to be found in the provinces of Ontario and Quebec, and these are the only ones of which account is taken in obtaining the figures of commercial production.

Previous to the outbreak of the war, the average acreage devoted to tobacco growing in Canada was between 9,000 and 10,000 acres and the normal production between 10,000,000 and 12,000,000 pounds, divided in fairly even proportion between Quebec and Ontario. Under the stimulated production of the war years, which affected tobacco in common with other crops, the acreage sown to tobacco was much increased and the annual yield multiplied many times. In 1919 from 31,586 sown acres a total yield of 33,770,000 lbs. was received, with an average of 1,069 lbs. per acre, a very low one for Canada. The year 1920 was a record-producing one for Canada, a yield of 48,088,500 lbs. being received from 53,114 acres, the average of 905 lbs. per acre being a relatively poor one.

With the general depression of trade which followed in the wake of the war and the almost universal disorganization of markets, Canadian growers found they had achieved an over-production of tobacco, and much of the 1920 crop had to be held over until the following year. The natural result was that 1921 saw a vastly diminished acreage sown to this crop. Ontario, from 6,553 sown acres, returned an average of 1,091 lbs. per acre, or a total of 7,121,962 pounds. Quebec secured an average of 1,166 lbs. per acre from 5,256 acres, or a total of 6,127,000 lbs. The total commercial tobacco crop of Canada for 1921 was 15,248,962 lbs., or less than half of that of 1919 or 1920. The crop was considered one of the best the country ever had, and had a total estimated value for both provinces of \$2,393,190 as compared with \$5,893,275 in 1920.

125 Tobacco Factories

In the year 1920 there were in Canada 125 tobacco factories, those manufacturing tobacco only numbering 24, those making cigars 86, those engaged in cigarette manufacture 2, whilst 13 plants combined in the production of different branches. Quebec and Ontario, being the principal producers, naturally led in manufacture, the former with 61 factories and the latter with 42 plants. British Columbia had 13, Manitoba 3, Nova Scotia 2, Alberta 2, Prince Edward Island 1, and New Brunswick 1 factories. In 1919 there were 144 factories in operation, the drop in 1920 being attributable to the short tobacco crop. Quebec has 41 plants manufacturing cigars and cigarettes and 20 making smoking tobacco. Ontario has 38 engaged in the making of cigars and cigarettes and 4 in tobacco. British Columbia's 13 plants are all engaged in cigar and cigarette manufacturing. Manitoba has two cigar and one tobacco plant and Nova Scotia one of each. Both Alberta plants are engaged in making cigars and cigarettes, whilst New Brunswick's plant is engaged in the same line and that of Prince Edward Island in tobacco.

At the end of the year 1920, which was at the height of the period of depression, a total of \$47,322,571 was invested in all the Canadian tobacco industrial establishments, \$33,966,154 being invested in cigar and cigarette plants and \$13,356,437 in tobacco factories. A total of 1,438 men and women found employment in the trade and received \$5,841,303 in wages and salaries. All plants in that year accounted for a production of \$74,652,188 in value.

The activities of the Canadian tobacco industry are largely confined to an endeavor to supply and satisfy the domestic market. During the years of the war, with the voluminous needs of the allied armies in the field, Canada built up a substantial export trade in manufactures of Canadian tobacco. In the fiscal year 1919 these exports amounted to \$5,394,535 and by 1920 had dropped to \$3,688,181. The full effects of the reaction, however, were experienced in 1921, when the total export trade in tobacco dropped to a value of \$210,844. The exports for the fiscal year ended March, 1922 show a slight increase in value over the previous year, amounting to \$259,629, which, taking into account the decline in prices, represents an increased volume of trade.

Imports Valued at \$10,000,000

Against this export trade stands a formidable import list amounting in value in the last fiscal year to 21,360,669 pounds valued at \$9,947,903, as compared with 20,504,163 pounds valued at \$14,356,294 in 1921, a somewhat larger volume though the value had decreased. Cigarettes, chiefly from Great Britain, were on the increase, last year's imports from England totalling 20,247 pounds and from other countries 6,889 lbs. The Cuban cigar is declining in favor of the Canadian-made, according to import figures, only some 13,000 pounds of Cuban cigars being brought in last year, or just half the quantity imported in the previous year.

The possibilities of the tobacco industry of Canada may be estimated when these import figures are considered in conjunction with a decline in the production of the Canadian leaf by more than a half. Canada has nothing to fear by comparison, for experts have adjudged the quality of the Canadian leaf as equalling anything in the world. There is room for expansive development in the export trade also. As the war years proved, Canada can, without undue effort, produce a much larger volume of the raw leaf and she possesses fine modern factories for its manufacture. Trade figures show that raw leaf exports were last year double the quantity exported the previous year, going almost entirely to Great Britain. With care paid to the development of the export trade the Canadian tobacco industry is one of great potentialities.

The Commercial Value of Poppy Seeds

Anyone who has travelled through the Canadian Rockies and sojourned at beautiful Lake Louise will remember with interest the vivid splashes of red, yellow, purple and orange—the multi-colored beds of Iceland poppies—that decorate the charming grounds of the Chateau. Seen against the azure waters of Canada's most picturesque lake with the snow-crowned glaciers of Mounts Victoria and Lefroy beyond and set in emerald velvet lawns, sloping gently to the shore, the effect to the eyes of the visitor is striking indeed.

There are many varieties of poppy both annual and perennial, all beautiful in garden decoration, many valuable for commercial purposes. From the crushed seeds of the latter, first and second grade oils for the manufacture of soap, varnish, etc., are produced. Nor is growth confined to the Rocky Mountains. For commercial purposes, the garden or opium poppy is cultivated on many prairie farms in Central Alberta and Saskatchewan. The Western Canadian Slavic or Ruthenian settlements in Alberta, in particular, include the cultivation of the poppy

as part of their crop, sometimes to the extent of an acre per farm. In order to extract the oil which they utilize for cooking purposes and for confections, they employ a special hand-made tool, which they originally brought from Europe for the purpose. With this oil, their menu includes cakes, pies, candies and sandwiches.

Method of Utilization

Bun dough is used when cake or pie is required. The crushed seed is mixed with honey and the raw dough left to stand for half an hour; then, in a moderate oven, the moisture is left to bake until the top becomes brown.

To make candy, the crushed seed is mixed with honey and nuts and boiled; it is then spread on a clean, wet board, pressed to the required thinness, cooled and cut into squares. The white-seeded or black-seeded varieties are used for oil pressing, but when the production of oil is the principal object of culture, the black seed is usually preferred. The quantities of oil yielded by both varieties and the proportion they contain (from 50 to 60%) are the same. By cold pressing, seeds of fine quality yield from 30 to 40% of virgin or white oil, a transparent liquid fluid with a slight yellowish tinge, pleasant to the taste and with no perceptible odor. On a second pressure with the aid of heat, an additional 20 to 25% of inferior oil is obtained, reddish in color but possessed of a biting taste and a linseed-like smell. The oil belongs to the linoleic or drying series, having as its principal constituent linolein, and contains greater drying power than raw linseed oil.

Medium for Artistic Oil Painting

Poppy oil is a valuable and much used medium for artistic oil painting. The finer qualities are used in the north of France and Germany as a salad oil and for adulterating olive oil; inferior qualities are employed in soap and varnish manufacture, for lamps and in oleaginous cakes as food for the poor.

When the Empire Press toured Canada in 1920, each member carried away with him from Lake Louise a small packet of Iceland seeds, and a packet was sent to Princess Louise (now the Dowager Duchess of Argyll), after whom the lake was named. Later, the Duchess wrote, at the request of Queen Mary, for a packet, so that it was presumed she had secured satisfactory results from those originally sent to her.

Canada's Transportation Facilities

Proportionately, more attention has been given to railway and canal construction in Canada than in any other country in the world. "No specific enterprise has done more to develop a country," says a Canadian Government pamphlet, "than did the Canadian Pacific Railway when it built the first great transcontinental line. Since

that time, railway mileage has rapidly increased, and to-day the Dominion is, in relation to the density of its population, remarkably well supplied with transportation facilities.

From the completion of the transcontinental line of the Canadian Pacific in 1886, there has been, until recently, no cessation in the construction of new lines. The main line of the Canadian Pacific Railway extends from coast to coast; from the winter ports of the Company's Atlantic steamships in the Maritime Provinces, it runs westward to Montreal, passing en route through the State of Maine. From Quebec and Montreal, the summer ports of the St. Lawrence trans-Atlantic route, Canadian Pacific main lines run westward to Winnipeg by two routes, one through Toronto and the other through Ottawa and Sudbury. The former offers an alternative, part water route via the Great Lakes, Port McNichol to Fort William, and is much frequented during the summer months. At 8.00 o'clock every morning, thirty-six transcontinental trains of the Canadian Pacific are crossing the continent, while at the same time thirty-six or more dining cars are serving breakfast. These trains include the famous "Trans-Canada," which makes the journey from Montreal to Vancouver, a distance of 2,885 miles, in the record time of 92 hours.

Across the Prairie Provinces

From Winnipeg, the line runs almost straight across the Prairie Provinces, through Regina to Medicine Hat, through the great grain-growing district, whence it turns in a north-west direction to Calgary and across the Rockies to the Pacific terminus of Vancouver. A network of branch lines covers the industrial areas of Quebec and Ontario and the agricultural districts of the Prairie Provinces. Other branch lines extend into north-western Alberta and the Peace River country. At important junctions along the border, the Canadian Pacific links up with United States systems. The total mileage owned and operated by the system is 19,882, the main line from Montreal to Vancouver being 2,894 miles long.

Practically all other railways in Canada are owned by the Government, the last acquisition being the Grand Trunk, which was taken over as a result of the recommendation of a commission appointed to investigate its financial standing. In brief, the reasons for the acquisition of this railroad by the Canadian Government were the difficulties in which the said railroad was involved; the liabilities resting on both Federal and Provincial Governments by reasons of financial guarantees; and the desirability of eliminating needless duplication of lines, etc.

The main line of the Grand Trunk runs between Montreal and Chicago with many branches covering Ontario. Its subsidiary, the Grand Trunk Pacific, connects Winnipeg with the Pacific coast. The Trans-continental, the Canadian Northern, the Intercolonial and a number of less important railways, now considered together as the Canadian National Railways, constitute the balance of the Government-owned lines, making a total of 22,230, including the Grand Trunk.

The total railway construction in Canada at the time of Confederation was some 2,300 miles; by 1897 it had increased to some 17,000, and in 1919 there was about 40,000, not including sidings or double-trackings. Since 1901 the total number of passengers carried has increased from eighteen to fifty millions and freight from thirty-six million tons to one hundred and twenty-seven million tons, which may be taken as a fair gauge of the economic expansion of the country.

Six Canal Systems

There are six canals systems under the control of the Dominion Government, the most important of which is that between Fort William and Montreal. The other systems are between Montreal and the international boundary near Lake Champlain; Montreal and Ottawa; Ottawa and Kingston; the St. Peter's Canal from the Atlantic Ocean to the Bras d'Or Lakes, Cape Breton; and the incompleted canal from Trenton to Lake Huron.

The first is the most important, because it creates an inland waterway from the Atlantic, nearly 1,000 miles in length. The main canal on this system, the Sault Ste. Marie, connects Lake Superior to Lake Huron, the St. Clair River, Lake St. Clair, Detroit River and Lake Erie with Port Colborne. The Welland Canal—which is nearing completion, twenty-six miles in length—connects Port Colborne with Port Dalhousie. From Port Dalhousie there is deep-water navigation to the St. Lawrence, where a system of canals, aggregating forty-six miles in length, carries traffic to the harbour of Montreal. Coupled with the admirable east and west system of railways, this inland waterway is of distinct value to Canada as a trade route for bulk commodities.

Shipping

The chief port of Eastern Canada is Montreal, where facilities for handling freight, grain, passengers, etc., are unequalled on the American continent during the season of navigation. During the season of 1921, over 140,000,000 bushels of grain passed through the port, a volume in excess of all other Atlantic ports combined from Halifax to Newport News. Quebec is of almost equal importance. These ports, situated on the St. Lawrence River, are utilized during the spring, summer and fall. They have a great advantage in mileage to European ports, to which the distance from Montreal and Quebec is very much less than from New York. Navigation down the St. Lawrence being in sheltered water, the proportion of travel across the open ocean is reduced by about one-third.

St. John, N.B., and Halifax, N.S., are the principal Atlantic winter ports, and Sydney, Cape Breton, is an important point for coal shipments. On the Pacific coast, Vancouver has one of the finest harbors in the world, from which several large steamship lines have regular sailings to Australian, New Zealand, Indian and most Oriental ports, as well as frequent sailings of cargo vessels, including South Africa and via the Panama Canal to Europe.

Passenger and freight services to Europe are provided by a large fleet of steamships operated by the Canadian Pacific Railway under the name of The Canadian Pacific Steamships, Ltd., and the White Star Dominion and Cunard-Anchor-Donaldson Lines. The Canadian Pacific Steamships, Ltd., also operates a fleet of passenger and freight steamships on the Pacific with sailings to Oriental ports, the Philippines, Australia and New Zealand.

Obvious Advantages for Export Trade

Many other lesser companies maintain services to Southern Europe, China, Japan, Australia and the Orient. A development of interest to shippers was the creation of the Canadian Government Merchant Marine, Ltd., a fleet organized during the war period to assist Canada's overseas trade. They are administered by the Canadian Government Railways.

Everything considered, transportation from Canadian markets is adequate. The manufacturer or exporter has at his disposal admirable railway facilities, a unique inland system of waterways, a number of important ocean ports on both the Atlantic and Pacific coasts and at the head of the St. Lawrence, and, in addition to Canadian, certain of the major steamship lines of Europe and America.

In conjunction with satisfactory transportation and shipping facilities, Canada affords obvious advantages for export trade with certain foreign countries. A branch factory in Canada is geographically valuable to a manufacturer whose market is in North and South America, the Orient or Australia. The manufacturing possibilities of Canada merit the closest consideration not only because of intrinsic conditions in respect of power, climate and material, but also because the European, Far Eastern and South American trade is readily accessible from her ports.

The Malt Liquor Industry

Those not intimately in touch with the existing situation might confidently conclude that the special conditions which have characterized the past few years, both in the Canadian Dominion and in the United States, would have spelt inevitable disaster to the Canadian brewing industry. The reverse would seem to be the case, however, and the industry is in a most flourishing condition, exhibiting greater activity than ever. The curious situation exists in Canada that whilst the prohibition of the sale of liquors is a matter of provincial decision and legislation, manufacturing is carried on under Federal Government charters. The Canadian trade in lager, ale and beer, after having shown consistent increases over a number of years, continues to make progress as illustrated in the 1922 trade figures. Whilst imports have naturally declined to a fraction, exports exhibit substantial annual increments.

There are 57 breweries in Canada, of which 20 are found in Ontario, 13 in British Columbia, 10 in Quebec, 5 each in Alberta and Manitoba, 2 in New Brunswick, and 1 each in Saskatchewan and Nova Scotia. The capital invested in these plants amounts to \$37,494,396, there being more than \$10,000,000 added in capitalization between 1919 and 1920. A total of 558 persons find employment in the industry, receiving salaries and wages totalling \$1,089,664. The cost of materials used in the year 1920 in the industry was \$12,525,107 and the value of production \$29,695,850.

Thirty-Five Million Gallons Produced

The production of the year 1920 consisted of beer, ale, stout and porter, in barrels, to the extent of 18,267,628 gallons; the same beverages in bottles to the extent of 16,622,905 gallons; 114,910 bushels of malt; 15,610 bushels of malt extract; grains to the extent of \$219,592; aerated water amounting to \$453,759; and other products accounting for a value of \$142,883.

The growth of the brewery industry in Canada is strikingly shown in the trade figures of the past ten years. Whereas in 1912, 1,459,747 gallons of ale, porter, lager and other beer were imported into Canada and 1,593 gallons exported from the country, in the year 1921, imports had decreased to 66,738 gallons and exports had increased to 793,172 gallons. The total value of exports, which go in small quantities to the United Kingdom and United States, and in larger quantities to Bermuda, Hong Kong, Newfoundland and other countries, was for the past year \$912,964.

Cattle Embargo Door Ajar

The United Kingdom embargo against Canadian cattle is apparently to be removed, bringing to a successful conclusion thirty years of effort and appeal on the part of Canadian governments and Dominion agriculturists.

The British House, without division, passed a resolution in favor of the removal of the Canadian cattle embargo to permit the introduction into England of store cattle, to be pastured and fattened there, whereas up to the present it has been necessary to slaughter animals at the port of entry within ten days of arrival. The removal of the embargo for which Canadians have strenuously fought since 1892 is calculated to have a beneficial effect upon the livestock industry throughout Canada, especially in the Prairie Provinces, and should bring back Canadian livestock figures to the important place they occupied previous to 1890.

Whilst the embargo, which has existed since 1892, ostensibly for the protection of prized British herds from disease, was in effect against cattle shipped from all outside points to England, it had no real effect except as against Canada and the United States, as it had been proven impracticable to ship such animals alive from Australia or South America owing to the long voyages and the extreme heat in crossing the torrid zone, and the United States using all the beef it produces.

The agitation for the removal of the embargo reached a higher pitch when the Fordney Tariff bill came into effect, virtually banning Canadian cattle from the United States markets. A more strenuous assault was made upon British parliamentary authorities. Canadian cattle were sent to England by governments and farmers' organizations to argue by their splendid qualities for unrestricted entry. This campaign was successful in having a Royal Commission appointed to investigate the question, the finding of which was that Canadian cattle were healthier than either English or Irish cattle, and their addition to British herds for breeding, dairying, or beef purposes calculated to promote their restoration and be of wholesale benefit to the British public. As a direct result of this, when the cattle industry in Canada was at a low ebb, the embargo is about to be removed, giving Canadian cattle unrestricted and unqualified entry into England, always provided all animals are in a healthy condition.

Advantageous to both Canada and England

It is hoped and confidently expected that the new situation will work considerably to the advantage of both countries and result in an increased interchange of trade so much to be desired at the present time. Canadian livestock breeders will now be in a position to market their animals at the pink of condition on the English market, which was their one outlet with the United States bars raised against cattle from the Dominion. A further result will undoubtedly be an increased importation on Canada's part of pure-bred stock from England and Scotland to raise the Dominion's beef exports to the highest possible standard.

In the period when the Western Canadian provinces were given over largely to giant ranches, the export trade in cattle overseas was one of Canada's basic industries. The opening of the United States market through the removal of its embargo in 1897 diverted this trade to more advantageous channels. The removal of the English embargo, which ordinarily might have caused a division of the trade between the two countries, will, with the effect of the United States tariff, see practically all this trade go to England. Whereas in 1901 there were five and a half million cattle in the country and seven millions in 1907, there were in 1921 nearly ten and a quarter million cattle on the smaller farms with their intensive acreages which have in the main supplanted the big ranches.

Will Benefit all Canadian Provinces

The total number of animals killed and marketed in Canada in 1871 was 507,725; in 1881, 657,681; in 1891, 957,737; and in 1901, 1,110,209. Canada's total cattle exports in 1901 amounted in value to \$9,604,562; and in 1905 to \$11,360,969. Total exports of live cattle in 1914 amounted to 218,929 worth \$7,916,794, of which 9,778

worth \$697,807 went to the United Kingdom and 206,446 worth \$7,043,086 to the United States. In 1917 the total exports were 166,182 worth \$7,884,842, none going to the United Kingdom in that year according to trade returns and 164,115 worth \$7,748,907 to the United States. In the fiscal year 1921 total cattle shipments amounted to 296,511 animals worth \$20,463,891, practically the entire year's shipments going to the United States with small quantities to the United Kingdom, Belgium, France, Newfoundland, St. Pierre and Miquelon, and other countries.

The removal of the embargo will undoubtedly give the Canadian cattle industry that encouragement and stimulus which it has needed since the ban against Canadian cattle was put into force by the United States. Whilst the Prairies will perhaps be the principal gainer, it is also expected to aid the growth of the industry in Ontario, which in the years previous to 1890 engaged in a considerable cattle export trade. Quebec and the Maritime Provinces must also inevitably benefit to a large extent through the new measure.

Outlook in Western Canada

By John Sweeting, Industrial Agent, C.P.R., Winnipeg

The promise of the Western grain crop is being fulfilled, and with it the increase of trading during recent weeks is fast becoming of notable volume. There are still some "kinks" to be straightened, but the outlook is definitely brighter—better and more stable.

In British Columbia mining continues to show good prospects, lumber manufacturers are talking of better business and reports appear to bear this out. The fruit crop is a very fair one, and, economically handled, will show nice returns to the growers. The fruit growers' organizations are co-operating closely with that end in view. There are some important industrial developments under review with a likelihood of new plants on the coast and at interior points. Fall and winter business should be satisfactory.

In Alberta a fine crop is being harvested, better in the southern areas than those of the more central and northern, but a good crop. Business conditions have been consistently showing improvement. Prospects for fall and winter trade are good with some new developments.

In Saskatchewan the crop is generally a good one; some areas have been affected, but the total crop will be satisfactory. A fair amount of building has taken place; some extensions of existing plants are promised, and a considerable improvement all round can be looked for.

In Manitoba the crop is good throughout the province. There is much improvement in business and some increased activity in construction work. Prospects for fall and winter trading are excellent.

At Fort William and Port Arthur conditions have been steadily improving throughout the summer. The building program has been extensive, with promise of additional plants.

There is a feeling of satisfaction manifesting itself throughout the West owing to much better prospects. Construction contracts awarded

during the first seven months of this year amounted to \$26,667,400, which included all classes of work, with actual factories, public buildings and residences amounting to \$19,829,-300. There are undoubtedly sounder prospects ahead for development with an absence of speculative methods, showing a return to normal business conditions with possibilities of great increase in trade and development.

Lack of confidence in Western Canada hardly appears to be justified in view of the known wealth of its natural resources, its large uncultivated areas of arable lands, its immense northern country only sparsely explored, and its recognized fuel, power, timber and mineral assets. Colonization by people and capital will soon turn dormant wealth into actively progressive prosperity. The time appears to be at hand when the first stage of this new development should take place.

Expansion of Manufacturing Industries

Since the beginning of the new year Canada has given various indications of a return to more normal and prosperous conditions, and there is no longer any doubt but that these indications will be borne out in substantially increased figures of production at the end of the year in practically every resource and manufacture. This re-awakening to activity has been evidenced in nearly all the Dominion's lines of industry, and in none has it been so pronounced as in the expansion and new establishment of manufacturing. Industry is striding apace with agriculture and manufacturing assuming a more important place each year in Dominion life. The annual production of Canadian manufacturing industries now amounts to approximately \$400 per head of population, whilst the country's exports equal \$150 per head, or the highest in the world.

The present year has seen focussed upon Canada and her opportunity a more than usual attention from trade interests, not alone to the Canadian domestic market, which is small, but to the export market, which, by virtue of Canada's strategic position, is expanding rapidly. One of the outstanding traits of the year has been the desire evinced by the United Kingdom to increase trade with Canada, which came happily at a time when certain Canadian products were barred from the United States market by the tariff and when Canada was finding it necessary to find other markets and to stir herself to develop trade within the Empire. This new interest has not only had the effect of bringing manufacturers from the British Isles to establish in the Dominion, but has stimulated the expansion of American interests in Canada to meet the competition.

Many New Incorporations

In the year 1921 a total of 1,081 charters were granted new companies commencing operations in Canada, the whole representing a capitalization of \$824,000,000. This year, during the first six months, new incorporations have approximated \$20,000,000 a week, and it would seem as if 1922 were going to create a record in this regard. At the end of the year it was estimated there were about eight hundred branch plants of American industries operating in Canada and about one-third of this number branches of English industries. Since the beginning of the year the British Isles, through the visits of various trades interests and manufacturers' representatives, has been brought to realize the expediency of following United States trade

methods in Canada, and there seems reason to expect in the near future the establishment of many British branch industries. Meanwhile the locating of fresh United States industries goes on unabated as more American houses come to realize that this is the ablest manner of capturing and holding the Canadian market and trading with the British Empire.

Among the many United States branch plants to be established this year is a copper and brass concern at Toronto, cutlery manufactures at Hamilton and Welland, electric bulbs at Oshawa, hosiery at Guelph, automobile manufactures at Sarnia, silk mills at Cowansville, auto tire plant at Hamilton, silk dyeing and finishing at Drummondville, and textile dyeing at St. John's.

The industrial boom which has hit Canada has favored all sections of the Dominion and covers practically all phases of industrial activity. This is a tribute to the country as a whole as possessing those qualities which prove attractive to manufacturers and show that the wide diversity of Canadian natural resources, profusely scattered, makes the establishment of industries in any section profitable.

The Automobile Industry Expands

The Border cities, always regarded in great favor by American manufacturers, have recently experienced a substantial expansion to their automobile industries through the doubling of the capacity of the Ford plant and the location in that area of the Dodge Company. The Eastern Townships of Quebec are developing as the premier textile centre of Canada almost solely through the establishment there of United States concerns, many of which have located since the beginning of the year.

As the result of the campaign waged by the Canadian Government with the object of educating British manufacturers, half a dozen branch plants of English manufacturing concerns are announced as locating. In addition an English automobile manufacturing industry is to enter into competition with United States firms manufacturing in Canada, and there is a possibility of an English firm establishing a lace-making industry in the near future. The firm of Dent, Allcroft, has located a subsidiary company at St. Catharines, Ontario, to manufacture the gloves which have made the parent house famous, and a representative of Vickers, Ltd., of London, England, has been in British Columbia with the object of establishing manufacturing and distributing branches in the province.

An Optimistic Outlook

The virtual ban existing in the United States against the introduction of Canadian agricultural produce has brought home to Canada the wisdom of becoming independent in this regard. The full result of this will only develop in the course of time, but already Canada has in sight the manufacture of her wool into a state ready for her textile mills, a work previously performed in the United States. The same desire has to some extent expanded the manufacture of asbestos products in Canada, the extension of the existing industry in the Eastern Townships of Quebec now being in a position to supply all Canadian requirements in this regard.

Altogether Canada has reason to be exceedingly gratified at the manner in which the Dominion has been favored this year by manufacturers in other countries, which would indicate a remarkable expansion in the country's industrial output within a very short period. Just how important Canadian industry looms up in the national life can only be estimated from a consideration of the fact that whilst in 1921 the agricultural production of Canada was valued at \$1,396,223,000, the industrial output in 1919 was worth \$3,520,724,039. Its growth is seen in a comparison with the figures of 1870, \$221,617,773, and 1900, \$481,053,375.

The Great Falls Development

It has been said that capital follows power and that people follow capital, and it is usually the history of a community where hydro-electric power has been introduced and consistently and properly marketed that industry has been stimulated and the development of the community generally furthered. The fact that certain areas of Canada are not provided with cheap coal supplies has been largely compensated for by the availability of potential water-power development. Power, for instance, had a great deal to do with making the city of Montreal the first industrial centre of Canada, and the same factor has resulted in the industrial prosperity of the Eastern Townships of Quebec. The same development can be effected, and is being effected, in other Canadian areas where good transportation is available, labor abundant and reliable, electrical energy provided.

At one time it was generally assumed that Winnipeg could never become a great industrial or manufacturing centre by reason of the absence of coal deposits within distance of economic transport from the city. The power possibilities of the waterways about it were disregarded. To-day the city of Winnipeg, after being the great trade distributing centre of the Prairie Provinces, is developing as its manufacturing centre. At the end of 1919 Winnipeg returned a record of 876 industrial establishments, capitalized at \$80,378,258, employing 23,175 persons, and accounting for an annual production of \$119,836,108.

The Winnipeg River provides the city of Winnipeg with two hydro-electric developments of the major class, the 35,000 horse-power plant of the Winnipeg Electric Company on the Pinawa channel, 58 miles distant, and the municipal plant at Pointe du Bois, with turbine horse-power installed at the present time to the extent of 47,000, and designed for an ultimate capacity of 100,000 horse-power. When these plants were installed it was seriously questioned whether the output could be absorbed by Greater Winnipeg. Yet within twenty years, despite the doubling of the capacity of the power supply, the expansion of the city and its suburbs, the great development of industry, and the anticipated industrial needs of the immediate future have necessitated making provision for an extension to the power available.

Extensive H.P. Development

This demand is being met by the Manitoba Power Company, which, at Great Falls on the Winnipeg River, is developing a project which, for dimensions and potential importance, is unequalled in the Dominion west of Niagara. One thousand men are working on the prelimi-

nary work preparatory to the installation of the units of a 168,000 horse-power plant. Several falls have been included in one concentration. A dam with a maximum height of 70 feet and 4,000 feet in length is being constructed which will raise the present level of the water 46 feet. The pond or reservoir so created is of an area of approximately 2,000 acres. The completed power house will contain six vertical turbo-generators. The initial installation is to contain a power house building to accommodate three units, and two generators are to be included of 21,000 k.w. capacity. For the first installation the amount contemplated to be spent at Great Falls is in the neighborhood of seven and a half million dollars, and ultimately ten and a half million dollars will be put into the work before the site is developed to its capacity.

The development of a power project of such magnitude has been undertaken upon the firm belief of prominent, hard-headed business men in the yet greater potentialities of Greater Winnipeg from the industrial standpoint. To utilize the power the completed project will provide, to the full extent, will require the introduction of seventy-five millions of dollars of capital to finance new industries, or practically doubling the present sum invested in Winnipeg's industrial enterprises. The fact that the necessary finances to complete the project have been forthcoming and the work is being proceeded steadily with, is indicative of a general faith in Winnipeg's industrial future.

Game on the Prairies

The fact that this year the ruffed grouse or prairie chicken is plentiful in the West, and the prairie sloughs are filled with wild duck, means not a little to the Prairie Provinces. The further report that many big game animals are on the increase and will furnish better hunting this year is further encouraging, for in their game birds and animals the Prairie Provinces possess a most valuable resource which, under intelligent care and expert provision against depletion, is maintained in this state from year to year. The announcement that this is a good game year for the prairies is pleasing to the farmer of that region, but the knowledge is hailed with greater pleasure by the many sportsmen outside for whom some spot on the prairies' expanse is Mecca each fall.

The Prairie Provinces are the natural home of the prairie chicken, the partridge, wild geese and ducks, rails, coots, black-breasted and golden plover, Wilson and Jacksnipe as well as moose, cariboo and deer. Despite the dense agricultural settlement of the southern areas of the provinces, the various game birds thrive among the many farms and do not appreciably dwindle in numbers, due to the shortness of the open seasons, the rigorous enforcement of the law, and the fact that the farmers, realizing their value, afford them what protection they can.

Wise Protective Legislation

Wise legislation has been enacted in the establishment of provincial game preserves, large areas of land set aside for the purpose of propagating and perpetuating beneficial birds and animals. Each preserve is in charge of a game guardian whose duty it is to see that the laws are enforced, forbidding, out of season, the hunting, shooting, trapping

or molestation of these birds and animals. A large number of private preserves are also being conducted under license, and are meeting with considerable success, geese, ducks, prairie chickens and partridge as well as deer multiplying rapidly under such protection. In the province of Saskatchewan alone, there are nine government game preserves with a total of 3,820 square miles or 2,448,000 acres of land.

The game of the prairies is of a twofold value to the provinces, supplementing the larder of the farmers and attracting a certain traffic among sportsmen. Any farmer can in season, without trouble, secure the limit of game birds the law permits him, whilst, with threshing complete and the summer's work off his hands, he regards it as both a holiday and a wise provision for the winter to secure a moose in his province's northern woods. The latter is evident from the fact that last year seventy-five per cent of moose licenses in the province of Saskatchewan were taken out by farmers.

Many Sportsmen from United States

The West, too has its sportsmen who come each year from the United States and other countries to take toll of prairie game. They are not as numerous as in certain other sections of Canada, but would doubtless be greater were more hunters apprised of the excellent sport the prairies offer. Even in the more settled agricultural districts there is excellent grouse and duck shooting. The northern lakes offer unequalled opportunities for duck shooting, whilst the possibilities of moose, once the hunter has left the prairie behind for the park and timber lands, are equal to any other section.

Last year in the province of Alberta there were 5,209 licensed duck hunters, and in this regard it must be stated that it is not necessary for a farmer to take out a license to shoot in his own district. Big game hunters in the province killed 1,018 moose, 68 cariboo, 10 mountain sheep, 47 mountain goat, and 1,120 deer. In the province of Saskatchewan, 25,000 licenses were issued to duck hunters and there are usually about 3,000 big game hunting licenses taken out. In an average year in Saskatchewan 1,280 moose were killed, 890 deer and 80 cariboo. Half a million dollars is spent annually in the province in big game hunting. Manitoba reached a new record last year when it issued 10,550 game bird shooting licenses, whilst its big game licenses usually average about 5,000.

The Open Season

In Alberta the open season for moose and deer is from November 1st to December 14th; for prairie chicken and partridge, October 15th to October 31st; for ducks and geese, September 1st to December 15th. In Saskatchewan, open season for moose and deer, November 15th to December 14th; prairie chicken and partridge, October 1st to October 31st; ducks and geese, September 15th to December 31st. In Manitoba, moose and deer, December 1st to December 10th; prairie chicken and partridge, October 15th to October 22nd; ducks and geese, September 15th to November 30th.

The Prairie Provinces have created for themselves such a renown agriculturally that they are frequently overlooked in respect to their many other valuable assets. Game there is a real resource. It provides at once sport and a valuable source of food supply to the settler and established farmer. It brings to it sportsmen and hunters who would come for no other reason, but who in search of sport must see, and carry away with them the knowledge of its varied attraction and opportunity.

Across Canada—The Border Cities

What are collectively known as the Border Cities of Canada comprise the centres of Windsor, Ford, Walkerville, Sandwich, and Objibway, in Ontario. As their familiar name suggests, they are situated on the international border between

Canada and the United States, and this location has given them a peculiar imprint and imparted certain characteristics which set them distinctively apart in Canadian affairs. As is inevitable, the close proximity of a great and more populous country affects them in many ways, socially and commercially. There is a constant interchange of people travelling back and forth across the imaginary border, whilst business interests have become to an extent allied and interwoven. More particularly has the city of Detroit, situated directly opposite the area occupied by the Canadian cities, had its effect in moulding the career and determining the destiny of the Dominion industrial centre.

The five cities have sprung up on the Detroit Riverside, directly opposite the American city, and only eight hundred yards from it. So closely adjoining are they that it is impossible for the observer to determine where the confines of one terminate and the other begins, and in reality they combine to form one centre of great and ever increasing industrial activity. Their location is one of great economic strategy. Served by five trunk roads running into both countries, they are on the route of all Canadian steamers on the Great Lakes, whilst they are linked up with other Ontario centres by electric lines.

An Increasing Industrial Centre

The Border Cities form one of the most rapidly increasing industrial areas of Canada, a movement which had its stimulus in the realization on the part of United States manufacturers of the wisdom of locating branch plants in Canada to engage in the Canadian domestic and export trade. Its situation made this inevitable. The proximity of Detroit determined what line of industry should be adopted and followed. The Border Cities are the centre of the Canadian automobile business. There are in the area about 250 operating industries, mainly of United States capital, and 37 automobile plants manufacturing automobiles, trucks, and accessories. In the year 1920, 36 new industries from the United States settled there and a larger number in 1921. Development, so far, in 1922 has been substantial, and there is no doubt as to the important place this area occupies in Canadian industrial life and the more important one it will fill in the future.

The total population of the area of the Border Cities is approximately 60,000, of which Windsor accounts for two-thirds. With the automobile industry ranking third among the manufacturing activities of the province of Ontario, Windsor is naturally an important centre. It has in all 162 industrial establishments, employing 2,554 persons, capitalized at \$20,244,130 and accounting for an annual production of \$11,664,975. Among other important industries are salt and chemical, bridge

building, machines and tools, crucible steel, clothing, textile, paints and varnishes, distillery, breweries and electrical machinery.

Centre of Canadian Automobile Industry

There are many developments taking place throughout the area of the Border Cities illustrative of the faith in this section on the part of foreign manufacturers, and illustrative of that greater future the area is destined to experience. At Objibway the Canadian Steel Corporation, a subsidiary of the United States Steel Company, has a two thousand acre site upon which all work preliminary to actual plant construction is already completed at a cost of \$5,000,000. This includes huge docks extending half a mile inland and capable of handling at one time eight of the largest steamers. The foundations of blast furnaces and wire mill are all in.

The automobile industry in Canada is continually increasing in importance, which means the further development of the Border Cities, which is the centre of the industry. The Ford Motor Company of Canada is to erect a new plant on a site of 125 acres to cost approximately \$6,000,000, capable of doubling the present output and turning out five hundred cars per day. It is further reported that Dodge Brothers are to shortly put up a large plant in the area and that the Reo Motor Car Company has purchased fifteen acres for a similar purpose.

The Border Cities, from their location and conveniences, are suited to practically all lines of manufacture, and manufacturers are coming to discover this in ever greater numbers. Particularly are these conditions to the advantage of the United States business man, who is evincing a justifiable interest in the section. Already one of the first of Canada's industrial areas, the Border Cities are destined for great future development and prosperity.

Preserving Canada's Historic Sites

Since 1605, when the first settlement was established in this country by De Monts, at Annapolis Royal, Nova Scotia, Canada's development has been rapid and to-day is recognized as an equal by many of those countries from which she drew the nucleus of her present population. Of the sufferings and sacrifices of the early inhabitants we have many interesting, detailed accounts, while the remains of old forts, as well as the thick-walled, loop-holed habitat of the settler, are mute evidence of the dangers which they were constantly exposed to from the periodical raids of Indians.

Many of these structures have been obliterated; some are still intact; while in many instances only a few stones mark the spot where once a bustling community existed. In addition a great number of relics of both English and French occupation are in the possession of individuals, societies, museums, etc., and in order that future generations, and those who may arrive from other countries in years to come, may be instilled with Canadian traditions, the Federal Government has under way a comprehensive plan for the marking and preserving of those historic landmarks which have hitherto been neglected, as well as looking after those already marked.

Each province has numerous landmarks, which are closely connected with its history, and in this connection the province of Quebec is especially rich. The citadel at Quebec City, which is in an excellent state of preservation, is one of the finest examples of early fortifications still existing on the American continent. Near Three Rivers is the ruin of the old St. Maurice forges, which were erected in 1730 and operated until 1880, under both French and English regimes. In their great furnaces, gun-shot, stoves, ploughs and many other implements required by the settler were manufactured. Montreal has many interesting historical sites, and the walls of numerous old buildings in the city are decorated with tablets recording some historical incident which has transpired within its walls.

The Earliest Settlement in Canada

At Annapolis Royal, in Nova Scotia, is the site of the earliest settlement in Canada, which in 1917 was set aside by the Government for historic parks purposes. Nearby is Grand Pré, immortalized by Longfellow as the home of Evangeline. Near Scotch Fort, in Prince Edward Island, is the landing place of the first Scotch settlers, the descendants of whom recently erected a tablet in commemoration of the event. In 1914, old Fort Howe, at St. John, New Brunswick, scene of so many stirring events in the early history of Canada, was set aside as a national park.

The only original blockhouse remaining in the Maritime Provinces, Fort Edward, Windsor, N.S., is to be preserved as a site of historic interest by the Canadian Parks Branch. It was erected by Major Charles Lawrence in 1750 and was later called Fort Edward in honor of Colonel Edward Cornwallis, then Governor of Nova Scotia.

Along the Niagara Frontier in Ontario there are several historical sites, scenes of many fierce struggles in the war of 1812-14 and the Fenian Raid. At Toronto, Queenston's Heights, Chrysler's Farm, and other points, monuments and tablets have been dedicated to the memories of those patriots who fought for their country. At Port Dover, where the Sulpician fathers, Dollier and Galinee, on March 23, 1670, erected a cross bearing the arms of France and took possession of the Lake Erie region in the name of Louis XIV, there is the famous "site of the cross."

In Western Canada there are many traces of the early trading posts erected by the hardy Scotch factors, and explorers of the Hudson's Bay Company and the Northwest Trading Company. The famous structure, Fort Garry, erected by Lord Selkirk for the protection of his infant colony spread along the banks of the Red River, has been carefully preserved, and on the site now stands the city of Winnipeg, the gateway through which the flood of golden grain from Western Canada's fertile farms passes on its way to feed the people of the Old World. At Lake Windemere, the Canadian Pacific Railway and Hudson's Bay Company recently began the erection of a replica of "Kootenay House," the first trading post in the interior of British Columbia, on the site of the original post. The old post was erected in 1807 by David Thompson, the famous astronomer and explorer, for the Northwest Company, and was later acquired by the Hudson's Bay in 1821.

A Board of Historians Appointed

Early in 1914, a beginning was made by the Government in marking and preserving these landmarks, but it was not until after the war that a determined effort was made to centralize and systematize the work. A board of prominent Canadian historians was appointed by the Federal Government to superintend the work in conjunction with the Dominion Parks Branch. It was first decided to make a detailed survey of historic landmarks and to date nearly six hundred have been inspected.

Several sites which appeared to be of national importance were selected by the Board and work will begin as soon as possible on restoration. In addition between fifty and sixty aboriginal earthworks have been chosen

for preservation and steps are being taken by the Dominion Parks Branch toward securing titles to the sites and having them suitably marked. An artistic tablet to be used in this connection has been designed by a well-known Canadian artist, and plaques are being cast in bronze. An attractive design has also been made for a memorial cairn, built of rough stones, which it is intended to erect on those sites where the original remains have been effaced.

While the value of this momentous work may not be fully appreciated by the present generation, future Canadians will undoubtedly be instilled with greater pride in their country's history as a result. In addition, these remains of early settlement in Canada will no doubt become the Mecca for thousands of tourists from all countries, more especially the United States, whose history is so closely interwoven with that of Canada.

The Canadian Film Industry

By Ray Lewis, Editor, Canadian Moving Picture Digest

Some time ago Canada was challenged for its statement, that having no production activities, it could not claim a Moving Picture Industry. The fact that Canadians built theatres, with Canadian capital, operated these theatres, bought pictures from exchanges, which had taken out Canadian operating licenses, did not appear to be of sufficient weight to carry the Moving Picture Industry premise. However, our claim to this dignity must now remain unchallenged. From all parts of Canada the information comes of production activities. The publicity bureau of the Board of Trade and Commerce at Ottawa have been producing and are producing pictures in various parts of the Dominion. The Filmcraft product, with the co-operation of Canadian Educational and the Star, introduced "Camera Classics" and registered picture production in the province of Ontario.

The Maritime Film Company is starting operations on its second picture. A company has been formed in Vancouver, B.C., to film Mr. R. G. MacBeth's popular book "Policing the Plains"—the company "The Canadian Historic Features, Ltd." under the personal supervision of Forrest B. Cornish. "The Man From Glengarry" has finished so successfully at Ottawa, that Ottawa Film Productions has voted to continue right on with the present organization, making "Glengarry School Days." Henry MacRae is the director and William Colvin production manager for Ernest Shipman, who controls the rights to all of the Ralph Connor stories, marketing them throughout the world. The company selected to produce Alan Sullivan's much-discussed book, "The Rapids," passed through Toronto on the 10th of this month en route to Sault Ste. Marie, where this stirring romance will be filmed under the direction of David M. Hartford. Kenneth O'Hara is company manager for Mr. Shipman.

On the Pacific Coast

Leading citizens of Vancouver have voted in favor of producing "The Chivalry of Keith Leicester," by Allison Hood. This is a story of Vancouver and the Frazer River Canyon, and a world "market" has already been secured, it is said, for this production. A committee has been formed at St. John's, Newfoundland, to make a series of feature productions which will be enhanced by all the picturesque and quaint locations with which Newfoundland's fishing industry abounds. The rights to Frederick Wallace's stories of sea life, "Viking Blood" and "Blue Waters," have been secured as the first of the series. The Associated Screen News of Canada under the direction of Mr. B. E. Norrish, who organized the Exhibit and Publicity Bureau of the Dept. of Trade and Commerce, is steadily producing pictures in all parts of the Dominion and has a most up-to-date plant and laboratory in Montreal. And to cap the climax of Canada's part in producing, we are to have a series of pictures made in Toronto. The first stirring story of Toronto's political life, the action of which takes place in Toronto, locations Hanlon's point and the Harbor. The story is by Hopkins Moorhouse. The rights to this story have been secured by Ernest Shipman, and he promises that this is but the first of a series of feature productions which we are to have produced here. Other information reveals that many other productions will be made in Canada under the already mentioned Trademarks; and that offshoots of these organizations will branch into their own producing centres. We must not forget to mention the producing activities of Winnipeg, "God's Crucible" and "Back to God's Country," "Cameron of the Royal Mounted" registering success.

Canadian Authors' Opportunity

Canadian authors are getting their opportunity in Canada's picture production, so are the many independent Canadian Exchanges which are springing up without U.S. affiliations, and concentrating on the idea of handling Canadian productions. We must not neglect to mention the formation of various Canadian syndicates, which have brought pictures into Canada to market; and this idea appears to be one which will be very much repeated and elaborated on. Canadian investors look upon the finished picture as a buy for Canada, a safe investment and conducive of satisfactory returns. Canadian Screen News Reels have been adopted by the majority of the leading producers who handle this kind of reel.

This year saw the formation of the Canadian Cinema Arts Society, The Laval Photoplays

Corporation with Mr. L. Ernest Ouimet as president and managing director. The purpose is to produce stories in California with a special Canadian interest and appeal. The Crescent Films, Ltd., was also organized at Montreal and will handle "Talking Moving Pictures." The Lellan Film Syndicate of Montreal plans to erect a studio in that city for the production of Canadian scenarios. Several U.S. producing companies have travelled to Canada to "shoot" scenes on particularly desirable locations. Ottawa reports a real "film colony"; and if production activities continue to be as active in the coming year as the past, we will have film colonies throughout the Dominion.

Manitoba's New Premier

The selection of John Bracken to head the new farmers' government in the Province of Manitoba is a further triumph for Canadian agriculture and for Dominion agricultural educational establishments, for the early life of the new Premier was spent on the farm, his maturer years devoted to the promotion of farm education and rural betterment, and his entire existence since boyhood compassed by matters of the soil. Though only thirty-nine years of age, with one exception the youngest Premier to lead a government in Canada, he has been provincial Livestock Commissioner of Saskatchewan, professor at the University of the same province, and President of the Manitoba Agricultural College, which latter post he relinquishes only to preside over the future destinies of the Province of Manitoba.

Unlike his fellow farm premiers of Alberta and Saskatchewan, who are Englishmen and graduated to the farm from city life, John Bracken is both a Canadian and the product of generations of real farming stock. He was born and raised on a large dairy farm in the county of Leeds, Ontario, and whilst still in his teens became warden of the county. After four years of farm management he went to the Ontario Agricultural College at Guelph, where he graduated with honors, taking three scholarships and one proficiency medal. He was a member of the first livestock judging team at the International Livestock Show at Chicago to bring to Canada the coveted trophy. As an example of his diverse qualities and ready adaptability, it is stated that though he had never played games of any kind prior to attending college, he was, within a few months, the best Rugby player it had, and is still considered one of the best athletes the college has produced.

Ably Filled Many Prominent Positions

After a series of post-graduate courses at United States universities, Mr. Bracken went to Manitoba as representative of the Dominion Seed Branch and did excellent work in stimulating interest in the production of better seed. On the formation of the Province of Saskatchewan in 1905, he was made Superintendent of Institutes and Fairs combined with the position of Livestock Commissioner.

His ascension after this was rapid. The opening of the University of Saskatchewan at Saskatoon found him installed as Professor of Field Husbandry, where his work made him known all over the continent as an authority on the production of field crops under dry conditions. He is the author of two books considered standard works on the subject, and in addition he has written no less than twenty-five pamphlets on various subjects pertaining to field husbandry. From the University of Saskatchewan he went to Manitoba Agricultural College as President.

The triumph of the farmers' party in Manitoba was followed by his unanimous selection as Premier of the new government, this in spite of the fact that he had never taken any active part in politics and had never attended a single session of parliament. His election was an acknowledgment of his sterling qualities as a leader, a recognition of his unceasing toil and achievement for the farmers of the province and an unqualified judgment as to his fitness to guide the government of a province whose prosperity lies mainly in the soil and the pursuit of farming. The qualities which made him the college's best Rugby player in spite of his ignorance of the game, should make him a good farmers' leader in spite of his lack of experience in parliamentary affairs.

Good Roads

The difference between national progress and retrogression may be pithily summed up in facilities of travel and transportation, and the maintenance of good roads is a matter which demands the unswerving attention of a modern country in no matter what direction it is making a bid for world prominence. National prosperity lies in a network of comfortable, easily travelled roads, and a country ranks among progressive nations according to its conveniences in accessibility and marketing.

The construction and maintenance of roads in Canada constitutes a problem that is peculiarly difficult. Canada is a land of tremendous area and small and scattered population. To adequately link up the settled areas of the country a network of roads is required which would be sufficient to render the same efficient service to

a people many times as numerous. Upon a family of four persons in Canada rests the enormous responsibility of building and maintaining one mile of roadway and upon five average families the construction and maintenance of a mile of main market highway.

Again, the peculiarity of Canadian conditions creates the necessity for the maintenance of so many types of roads to accommodate the various methods of travel. Whilst the older settled cities and towns and the areas about them are most modern in every respect and their lines of communication as up to date as engineering can effect, there are many areas that have but recently emerged from the pioneering stages, and still other districts that are only being opened up to colonization and that must be served by roads of some kind.

The Penetration of New Areas

The prime consideration in roadbuilding in Canada is possibly to enable the farmer to reach the markets with his product as conveniently and economically as possible, and this has first consideration in the drawing up of national programs. A second requirement is to maintain good means of communication between the larger centres and to adequately serve and further encourage motor tourist traffic, which is rapidly increasing every year and has become a not insignificant asset in Dominion revenue. Each year the increase in the settlement and cultivation of farm lands makes necessary the penetration of new colonization areas, which can only be effected by the construction of roads which will permit new settlers to get into them with the least degree of trouble and inconvenience.

Canada is rapidly gaining a reputation abroad for good roads, consequent upon a Dominion-wide policy of co-ordinated effort, due to the foresight of Dominion and provincial governments and their co-operation in construction and maintenance. The Canada Highways Act of 1919 was a recognition of the important part played in the development of national prosperity by good roads and elicited the co-operation of all sections of the Dominion in maintaining a high standard. The bill made the sum of \$20,000,000 available during the following five years, to be divided among the provinces on the basis of population, with the expenditure of proportionate amounts by these provinces to a total of \$30,000,000.

18,000 Miles of Main Roads

That the provinces are not limiting their expenditures to those amounts necessary to obtain the Federal grants is very apparent. In the five-year period after the passing of the Act, it was estimated that Ontario would spend \$60,000,000 on its highways, and this sum will undoubtedly be reached. Quebec's highways

prior to 1912 had cost \$40,000,000 in the work done upon them, and since that time \$30,000,000 has been expended. This year the province will spend \$7,500,000 upon provincial roads, by far the largest amount spent in years, due to the inclusion in the program of amounts for colonization roads into newly opened areas in Northern Quebec.

At the present time there are 18,000 miles of main roads in the various provinces and networks of communications branching off from them to serve the rural areas. In addition to the maintenance of these, new roads are being constructed each year. These serve to join up the provincial centres, and it is now the aim of the various governments to join up the provincial systems and provide a main highway across Canada from coast to coast, an undertaking not difficult of accomplishment and the accomplishment of which may be soon expected.

Excellent motor roads join up all the principal civic centres and the avenues to the international boundary are maintained at a fine standard. Last year half a million motor tourists visited Canada from the United States alone, staying for various periods from one day to six months, and it is stated that the number of visitors staying for over one month has doubled within the past few years. In many cases the upkeep of such highways as Toronto-Hamilton, Ottawa-Montreal, Montreal-Quebec is paid for by the tourist traffic upon them, and the completion this year of the roadway of the Grand Circle Motor Tour, running from California in the south to Alberta in the north, linking ten national parks, and constituting the finest scenic motor tour on the continent, is expected to bring the Dominion an unprecedented volume of motor traffic.

The Result of Good Highways

The importance every section of the Canadian people attach to the possession of good roads was evidenced at the last good roads convention held in Victoria, B.C., which drew from Atlantic to Pacific cabinet ministers, members of parliament, provincial and civic engineers and prominent business men from all sections of the Dominion, as well as attracting representatives of many states of the Union for the exchange of views and experiences. It marked the half-way house in the progress effected since the passing of the Canada Highways Act and formed a point of retrospect as well as prospect. To date 204 agreements for Federal aid have been authorized for 5,125 miles of provincial road at an estimated cost of \$29,461,515. The total amount of provincial expenditures audited with respect to this work is \$15,974,591, and the total amounts of payments made with respect thereto is \$5,179,275. The total mileage of completed Federal aid work to the time was 1,400 miles and the mileage under construction 2,397 miles.

Excellent Fishing Season

All indications tend to the conclusion that Canada is experiencing one of the most successful and profitable fishing years for some time. The value of the catch of the first six months of 1922 was a million dollars in excess of that of the corresponding period in 1921 in spite of a slight decline in prices. When it is considered that approximately one hundred thousand people are engaged in the catching and processing of fish and at least fifty thousand more in fish merchandizing, it is clear that the bountifulness of nature in the sea and freshwater fisheries is bound to have its effect in hastening the return to normal conditions of Canada's economic situation.

The success of fisheries and the bright prospects for the remainder of the year seem consistently spread over the whole Dominion and to comprise every variety of the commercial catch. The Prince Edward Island lobster catch is estimated to amount to something like ten thousand cases, or to be about thirty per cent greater than last year. The smelt fishery of the island and also of New Brunswick has given returns much in excess of past years.

The same excellent conditions prevail in Quebec. The Minister of Colonization, on his return from a tour of the province, is quoted as saying, "The salmon fishing this year has been marvellous and is considered by old fishermen to be the best in the last thirty years." Cod have also been exceptionally plentiful. There has likewise been an abundance of mackerel, some 250,000 pounds having left in the first seven months of the year from the fishing grounds for Montreal, New York and Boston. The fact that Quebec now has complete control and administration of its tidal fisheries is expected to result in yet further stimulation and development.

Many Blue Nose Vessels Out

Nova Scotia had a larger number of deep-sea fishing vessels engaged in the spring fishing this year than in any since the war, and their anticipations of a good season were not belied. This year they have engaged in what has been the best mackerel fishing season in fifteen years, the run of the fish being in such volume that a total value of something like \$2,000,000 is expected by the conclusion of the season. In July more than one hundred sail left the port of Louisbourg for the swordfish fishery in the confident expectation of a catch in excess of the million pounds shipped from Cape Breton to the United States last season.

Fishing in the inland lakes of the North-West is exceptionally good this year, according to government authorities. Lake Winnipeg alone is expected to produce 1,500,000 pounds of whitefish this season as well as large quantities of pickerel, jackfish and tullibee. Saskatchewan's inland fisheries are expected this year to exceed

in value the \$300,000 which was the value of the marketed product in 1921, whilst unprecedented activity prevails in the lakes of Northern Alberta and their product maintains its favor in the cities of the United States.

At the Pacific extremity of Canada there is the same happy situation. All indications tend to the assumption that the British Columbia salmon catch this year will exceed those of 1920 and 1921 and be about equal to the banner year of 1919. The volume of the halibut catch in Pacific waters is reported to be about three times that of last year. The provincial herring catch exceeded 50,000,000 pounds, of which 45,000,000 pounds were dry salted for export to the Orient. Whale hunting off the British Columbia coast was resumed this year and the fleet is reported to have met with considerable success.

Expansion on the Pacific Coast

There are many signs that the Canadian fishing industry is due for more prosperous times and is achieving a permanent expansion. Greater attention is being paid to improving the conditions of the industry, whilst new development is expanding actual operations. Certain matters have occupied the Council for Scientific and Industrial Research, one being the "rust" in codfish, and the successful discovery of a ready method of prevention is expected to result in the saving of millions of dollars to Maritime fishermen.

On the Pacific coast there is continual expansion to the industry to be noted. A shark tannery is to be operated on the west coast of Vancouver island this summer to utilize the hide of the shark and to extract the oil for medicinal purposes. Near Prince Rupert another fish by-products plant is being opened up for the manufacture of fish fertilizer and meal and the extraction of fish oil. The plant will operate the year round, and this year will turn out 1,000 tons of fertilizer and 100,000 barrels of fish oil. Further innovations in the export of fish are to be noted, and the experiment of sending frozen fish to New York, via the Panama Canal, has been so successful in every way that it is confidently expected a substantial trade will be developed.

The Canadian fishing industry, after suffering a severe slump in the years immediately following the war, is exhibiting vigorous indications of revivification, and is on the way back to the steady progress it exhibited in the past.

When it is considered that with a production valued at about \$30,000,000, exports of fish and fish products of about \$60,000,000 and an importation of about \$6,000,000 per year Canada has the most expansive fisheries in the world, and that of about six hundred known edible varieties merely twenty or so are commercial factors on the market, the practically limitless possibilities of the fish industry in Canada may be realized.

Motion Picture Films

A print of each of the following films issued by this department is deposited with the representatives listed on the back page. These are available upon application for use by schools, theatres, clubs, societies, boards of trade, and other associations and organizations.

Homemaking by Irrigation.—Irrigation farming in Southern Alberta, the various operations and their results.

The Land of Promise.—Featuring the well-known agricultural section of Battleford, Saskatchewan.

Opportunity.—Illustrative of Western Canadian opportunity, more specifically in the district of Lloydminster, Alta.

Livestock and Dairying.—The fine status and remarkable progress of this industry in Western Canada picturized.

Taming the Last West.—Depicting the evolution of the Canadian West from buffalo range to a modern agricultural area.

The Sunny Side of Rural Life.—The farmer on holiday, showing that life in Western Canada is not all work.

The Evolution of a Grain of Wheat.—The life of wheat seed from the time it is sown until its progeny enters into the composition of a loaf of bread.

Apple Growing in Evangeline's Land.—Orchard cult in the region Longfellow's poem made famous.

The Apple Harvest of the Okanagan.—Gathering and shipping apples in the beautiful British Columbia valley.

Curing Fish in Nova Scotia.—Depicting the various phases of curing and smoking fish in the Maritimes.

The Canadian Sardine.—The sardine caught, canned and distributed.

Some Water Powers of Eastern Canada.—The beautiful and powerful waterpowers of the Eastern Canadian provinces.

The Silver Fox Industry of Canada.—The domestic ranching of silver foxes in Prince Edward Island.

New Homes Within the Empire.—The camera follows the progress of a British immigrant from the first awakened interest in Canada till when he settles on a Western farm.

Trail—the Metallurgical Mecca of Canada.—Work at the Sullivan Mine and the operations of the plant of the Consolidated Mining and Smelting Company at Trail, British Columbia.

Departmental Publications

Any of the following publications will be sent free on request.

The Prairie Provinces of Canada.—A descriptive statistical booklet on the provinces of Alberta, Saskatchewan and Manitoba, with full information on the opportunities for farming in the West.

Business and Industrial Opportunities in Western Canada.—Full listings of industries existing and business openings in the provinces of Western Ontario, Manitoba, Saskatchewan, Alberta and British Columbia.

Why Canada.—Reliable and comprehensive information for the United States manufacturer, showing the advantages of establishing his industry in Canada.

Canada's System of Government.—Canadian government briefly outlined to portray its democratic traits.

The Story of Canadian Nickel.—History of the nickel mining industry.

Canadian Oil Exploitation and Prospects.—An expert engineer's history of Canadian oil development and future possibilities.

Canadian Water Power Development.—Authoritative and exhaustive survey of water power reserves and possible development.

Irrigation in Western Canada.—A comprehensive survey of irrigation in the West from the initiation of the first project to the extensive developments of the present day.

Education in Canada.—The wide scope of Canadian education depicted to show that a settler need have no apprehension in this regard.

A Canadian Grain Handling Plant.—How Canadian grain is stored and shipped. Authoritative article on Canadian elevators.

Value of a Settler to Canadian Railroads.—Computation from reliable statistics of a farming settler's revenue-producing worth to Canadian railroads.

Bituminous Sands of the Athabasca Region.—Description with known values, and possibilities of development of the widely known tar sands of Northern Alberta.

Water Powers of the Maritimes.—Authoritative article on the undeveloped power systems of the Eastern provinces.

Water Powers of Manitoba.—The water powers of this province dealt with exhaustively.

Oleomargarine.—History of oleomargarine in Canada and its future prospects.

Synopses of Natural Resources.—Pamphlets dealing briefly but concisely with Kaolin or China Clay, Oil Shales, Mica, Fluor-spar, Asbestos, Molybdenum, Magnesite, Fruit, Flax Fibre, Nickel, Coal, Clays, Salt, Copper, Zinc, Silver, Gold, Pyrites, Iron, Potash, Talc, Feldspar, Platinum, Phosphate (apatite) Manganese, Graphite, Cement, Barytes, Gypsum, Petroleum and Natural Gas, Corundum, Sulphates of Sodium and Magnesium, Fur, Fish, Peat, Mineral Waters, Building and Ornamental Stone Flour Milling and Water Powers.

The Department of Colonization and Development

The Department of Colonization and Development has the following offices established in Canada, the United States, Great Britain and Europe, whose representatives, at any time, will be glad to furnish information regarding Canadian agricultural, industrial and commercial enterprises.

MONTREAL, P.Q.	H. C. P. CRESSWELL, Supt., 335 Windsor St. Station.
WINNIPEG, Man.	J. F. SWEETING, Industrial Agent, Canadian Pacific Railway.
CALGARY, Alta.	M. E. THORNTON, Supt. U.S. Agencies, Ninth Ave. and First St. East.
VANCOUVER, B.C.	E. J. SEMMENS, Travelling Industrial Agent, Canadian Pacific Railway.
NEW YORK, N.Y.	L. F. MOWREY, District Representative, C.P.R. Bldg., Madison Ave. at 44th St.
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or any agent of the Canadian Pacific Railway Company or Canadian Pacific Steamships, Ltd. in United States, Great Britain, or Europe.

A. B. CALDER,
ASSISTANT to the COMMISSIONER,

J. S. DENNIS,
CHIEF COMMISSIONER,

Ask the Canadian Pacific about Canada



Agricultural and Industrial Progress in Canada

A monthly review of Agricultural and Industrial progress in Canada, published by the Department of Colonization and Development of the Canadian Pacific Railway at Montreal, Canada.

VOL. 4—No. 10

MONTREAL

October, 1922

The Upward Swing

THE more that is known of Western Canada's wheat crop, the higher go the estimates for the total yield, the Government having now placed the estimated yield in the Prairie Provinces at 365,045,000 bushels, and the total for all Canada at 388,733,000. If this estimate is borne out, it will give Canada the second largest wheat crop in her history, and, coming on top of marked recovery in industry generally, makes the outlook very promising.

A yield of 365,000,000 bushels of wheat in the Prairie Provinces of itself contains quite a story of development, for this will mean about 5,000,000 bushels more than the record-breaking yield of 1915. In that year the 360,000,000 bushels were due entirely to the bounty of Nature, the average yield per acre for spring wheat in that year having been a little over 26 bushels. But this year Nature has not been nearly so bountiful, the average yield being estimated at 17.25 bushels. The immense yield has been due to the fact that whereas in 1915 there were 13,900,000 acres in crop in the Prairie Provinces, this year there are approximately 7,500,000 acres more. The splendid crop this year, therefore, is entirely due to the development of the country within the past seven years.

Such facts as these explain Canada's industrial progress. They explain her ability to come back. Furthermore, while other countries are talking about getting back to their pre-war-production levels, Canada, in her wheat acreage alone, reports an increase of well on to 100% within the last ten years. When one takes into account that within the settled area of the West there are 25,000,000 acres of good land

untilled, a fairly good idea of the possibilities for further development is gained.

The return of the Canadian dollar to par naturally excited much favorable comment. One of the important features of the comment is that the recovery has been very largely due to American investment and interest. Mr. E. L. Pease, Vice-President of the Royal Bank of Canada, in this connection, says: "The return of the Canadian dollar to par is a wonderful tribute to Canada. Look at the countries to the south—Brazil and Argentina—their currency is not yet approaching anything like normal. Our proximity to the United States has helped us very largely, for Americans are investing heavily in the Dominion, making this country an export centre for the distribution of

their goods to all parts of the Empire. Despite the Fordney Tariff, the United States must buy our wheat for mixing purposes, and that will give us an advantage; the coming of our 350,000,000 bushel crop will mean another advantage."

Mr. E. W. Beatty,

President of the Canadian Pacific Railway, interviewed at Fort William on his Western trip, said: "We have a tremendous crop, which it is hoped will be marketed readily and at fair prices. If those anticipated results are secured we should start the next calendar year in a much more favorable position than existed in January of the present one. The financial situation is clearer and stronger, and the fact is that the most difficult period has been successfully passed, and confidence in the future should be high."

Customs and excise revenue during August showed an increase of nearly \$5,000,000 over the same month of the previous year, dutiable goods being responsible for over \$1,000,000 and the balance attributed to the sales tax, tax on cheques, etc.

LATEST GOVERNMENT CROP ESTIMATE

	1921	1922	Increase
Wheat.....	300,858,100 bu.	388,733,000 bu.	87,874,900 bu.
Oats.....	426,232,900 bu.	558,358,000 bu.	132,125,100 bu.
Barley.....	59,709,100 bu.	76,395,500 bu.	16,685,400 bu.
Rye.....	21,455,260 bu.	49,601,800 bu.	28,146,540 bu.
Flaxseed.....	4,111,800 bu.	5,296,000 bu.	1,184,200 bu.
Hay and Clover..	9,930,000 tons	15,545,000 tons	5,615,000 tons

Agricultural & Industrial Progress in Canada

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It will be appreciated by the Department if editors and writers using matter from this Bulletin will quote source.

Norman S. Rankin, *Editor of Publications.*
E. L. Chicanot, *Asst. Editor.*

Additional expansion is announced in the pulp and paper industry, in oil development and in nickel production. President McLaughlin of the Ontario Automotive Industry is authority for the statement that the "total automotive investment in Canada is over \$600,000,000."

The Government, backed by the Trades and Labor Congress, seems to be finally moving in the immigration question, and has reported the unemployment situation normal. An upward swing towards things Canadian—which can't be headed off—has started in the United States; notwithstanding which, Great Britain has ousted the latter as Canada's best customer for domestic products.

The Crop Situation

By J. Dougall and T. S. Acheson, General Agricultural Agents, C.P.R., Eastern and Western Lines

At September 30th cutting of grain in Canada is complete. Rains have more or less retarded threshing, but reports indicate better weather, and no damage is anticipated. Light frosts have been reported in Northern Alberta and Saskatchewan, and also in some districts of Ontario and Quebec, but this is applicable only to garden crops. The rains during the month have materially altered the situation. Pastures are now reported in good condition, and in some districts where crops were light it is now stated that reasonable yields can be expected. The quality of the crop is well above the average.

The Dominion Government estimate of September 14th for all Canada is inset in the centre of the front page.

The three Prairie Provinces are estimated to yield as follows:—

Manitoba		1921	1922
Wheat.....	39,054,000	65,590,000	
Oats.....	49,442,500	95,498,000	
Barley.....	19,681,600	32,540,000	
Rye.....	3,564,700	5,838,000	
Flax.....	544,700	768,000	
Saskatchewan		1921	1922
Wheat.....	188,000,000	230,218,000	
Oats.....	170,513,000	200,925,000	
Barley.....	132,343,000	13,073,000	
Rye.....	13,546,000	37,634,000	
Flax.....	3,230,000	4,165,000	
Alberta		1921	1922
Wheat.....	53,044,000	69,237,000	
Oats.....	64,192,000	42,475,000	
Barley.....	11,657,000	10,337,000	
Rye.....	1,999,000	3,465,000	
Flax.....	171,000	194,000	

British Columbia.—Rains have fallen throughout the fruit areas and the fruit is coming to the packing houses in good condition. The quality is reported excellent.

Alberta.—Conditions continue to be good. Rains have materially improved pastures, and much better yields are now reported from the northern area, which suffered from lack of moisture. Threshing continues in full force and grain is moving freely.

Saskatchewan.—Cutting is completed. Threshing continues general throughout the province. Some delay has been occasioned by rains. Labor somewhat short.

Manitoba.—Rain in this province has delayed threshing but there are no reports of damage. Weather conditions good.

Ontario.—This province has had excellent weather for all crops and harvesting is complete. The Niagara fruit district has produced probably the largest crop in its history. Peaches from this belt have been shipped to England, and reported as finding good markets. The yield of apples is estimated at 30 per cent over 1921, or 1,150,850 barrels of commercial grades. The feature of the year is that the crop has been disposed of with very little loss.

Quebec.—Weather conditions continue satisfactory and harvesting is completed. Silo corn will be a little light, but pastures are excellent. The apple crop is estimated at 61,600 barrels of commercial grades.

New Brunswick.—General conditions are good, and pastures excellent. Owing to wet weather during the last six weeks the yield of potatoes will be under that anticipated. Market conditions are indifferent and growers are dissatisfied with the prices offered. The apple yield is estimated at 41,250 barrels of commercial grades.

Nova Scotia.—General conditions good. Pastures excellent. Potato crop will be under earlier estimates owing to rain. Markets are poor. The apple crop of the Annapolis Valley has held up to previous estimates of 1,527,000 barrels. Fruit is sizing up well and clean and the market is good.

Prince Edward Island.—Conditions on the whole are good although the potato yield will be somewhat lighter than anticipated.

Livestock.—Pastures throughout the Dominion are in fine shape. Owing to lack of rain during the summer, certain districts in Northern Alberta and Saskatchewan are short of winter feed. Other provinces, however, have more than sufficient. The export market for live cattle to Great Britain has closed down owing to the poor prices obtainable on the market due to heavy runs of Irish cattle. It is expected, however, that if the embargo is removed a considerable number of "stores" or feeding cattle will be moved.

Ginseng in Canada

Ginseng is a medicinal herb considered an excellent tonic and one of the best invigorators of failing health. Commercially there are two species, the Chinese, which does not grow wild, and the American, which is a native of the country. The principal market for this plant is in China, whilst a quantity of ginseng root is used by Chinese residents in America and also by drug manufacturers for making medicine. It is taken by the Chinese in the form of pills, ointment and confection as well as infusion.

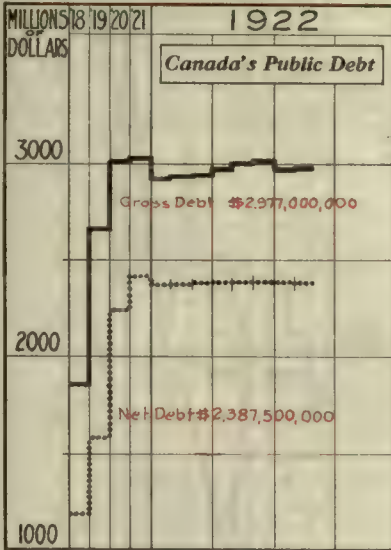
Ginseng was first discovered in Canada near Quebec in 1704, and later a Jesuit missionary again found it near Sault Ste. Louis. The Indians and settlers in Quebec began to collect the plant and a considerable amount was exported. In 1752 the quantity recorded as being exported to France was valued at 500,000



Investors' Index of Canadian Conditions

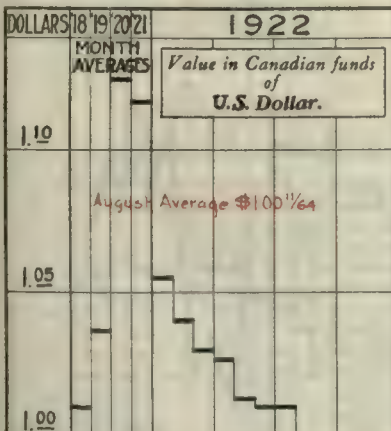
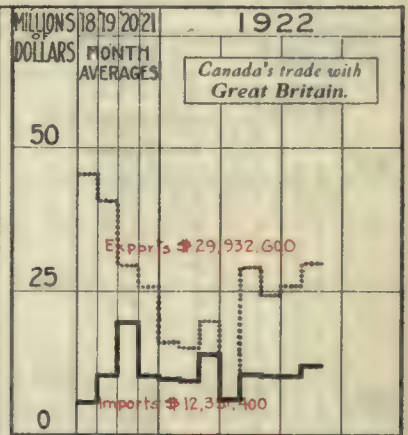
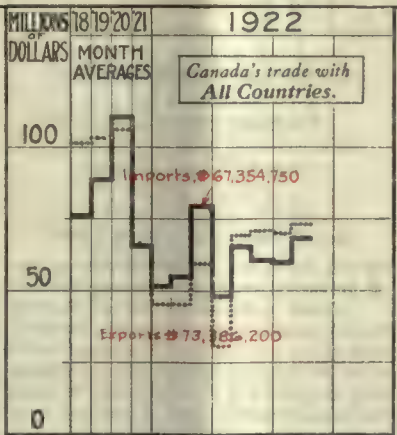
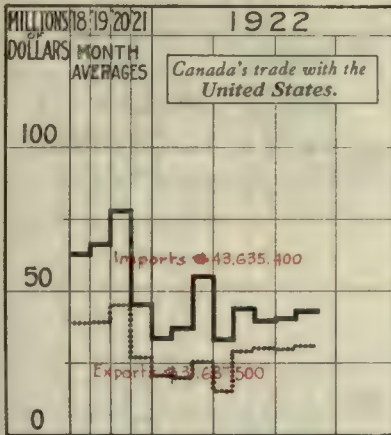
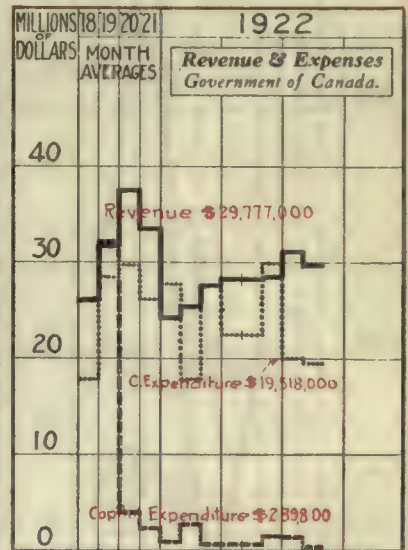
OCTOBER, 1922

A permanent group of Charts on Key Statistics brought up to date and issued monthly by the Department of Colonization and Development, Canadian Pacific Railway, Montreal.



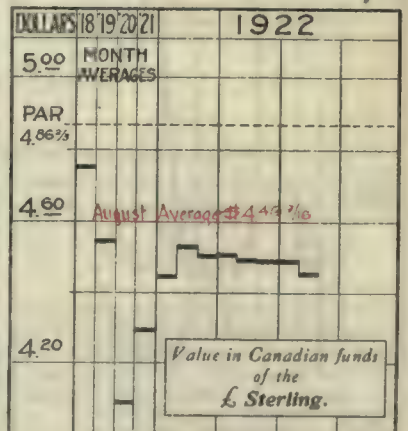
Government's Position

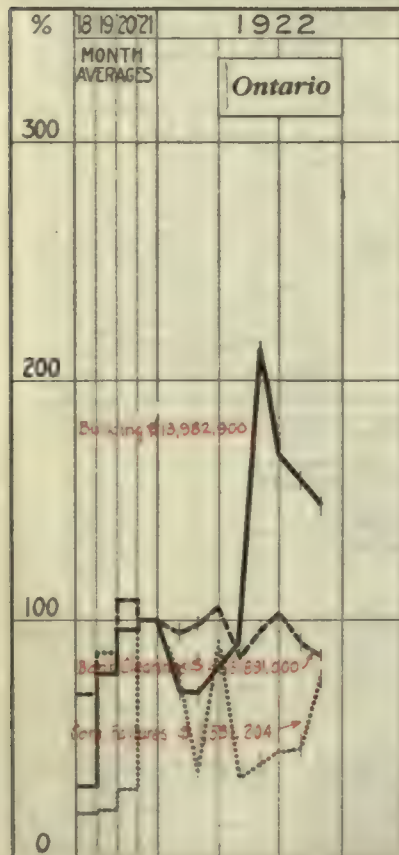
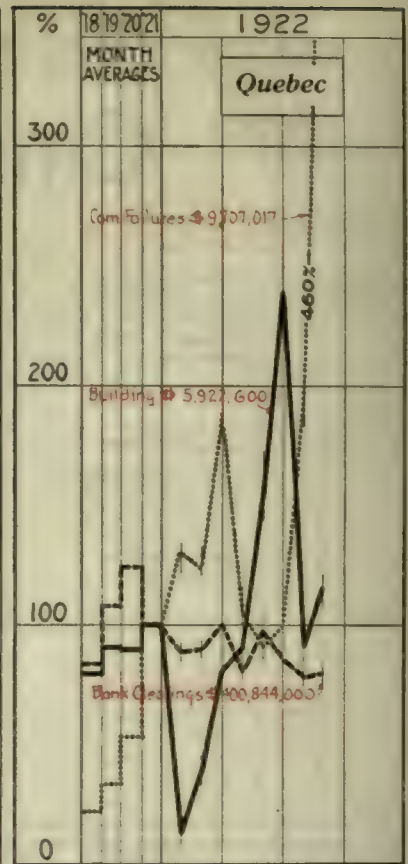
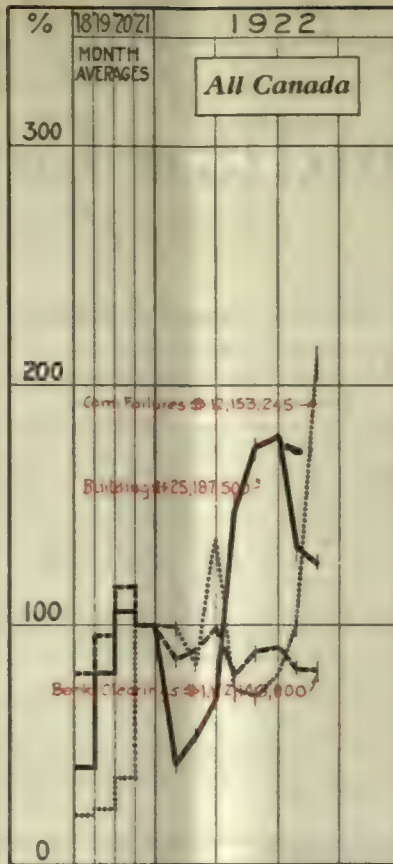
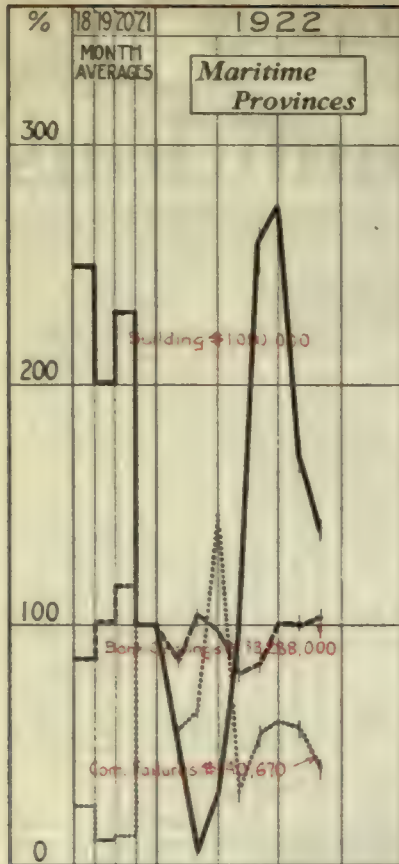
CONSERVATIVE management of Canada's finance continues to improve the country's position. Referring to the chart on the right, it is to be noted that an increase in Revenue, due in part, no doubt, to the new taxes, combines with the further decreases in Expenditure to give the administration an actual net gain for the month of August. A further satisfactory decline of almost \$5,000,000 in the Net Debt of Canada will therefore be observed on the chart at the left. This is real gain and represents a better position even than that of a year ago, when the Net Debt, though reported at a lower figure than to-day's figure, was actually higher, the Assets balanced against the Gross Debt at that time being valued less conservatively than they are to-day. Canada's position, in spite of international conditions, is by comparison very good indeed, and continues to improve daily.



Canada's Foreign Trade

THE Fordney Tariff appears to have less effect on exports to the United States than was expected. The railways report important increase in the movement, especially of forest products and even grain into American territory. The swelling volume of British trade is viewed with satisfaction. Meantime aside from these principal trade relations many Canadian firms are finding markets in the Orient. The arrangements for an exhibit of Canadian manufactures in a principal Chinese port will doubtless stimulate this development. The return of the Canadian dollar to par in New York removes a form of "protection" on the Canadian market against the import of American goods to Canada.





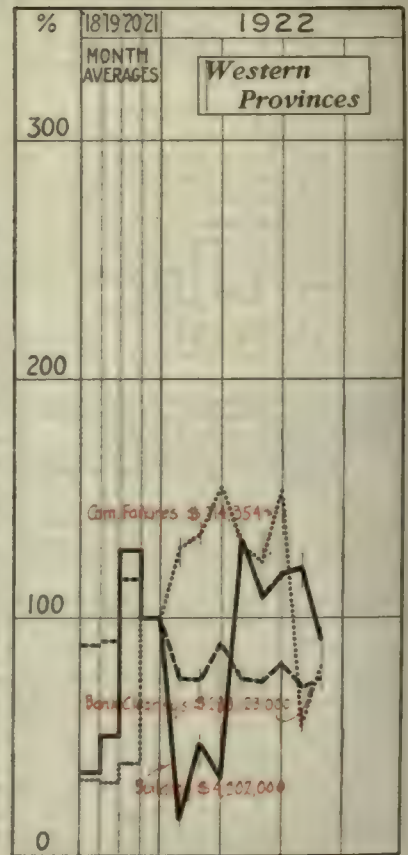
District Conditions

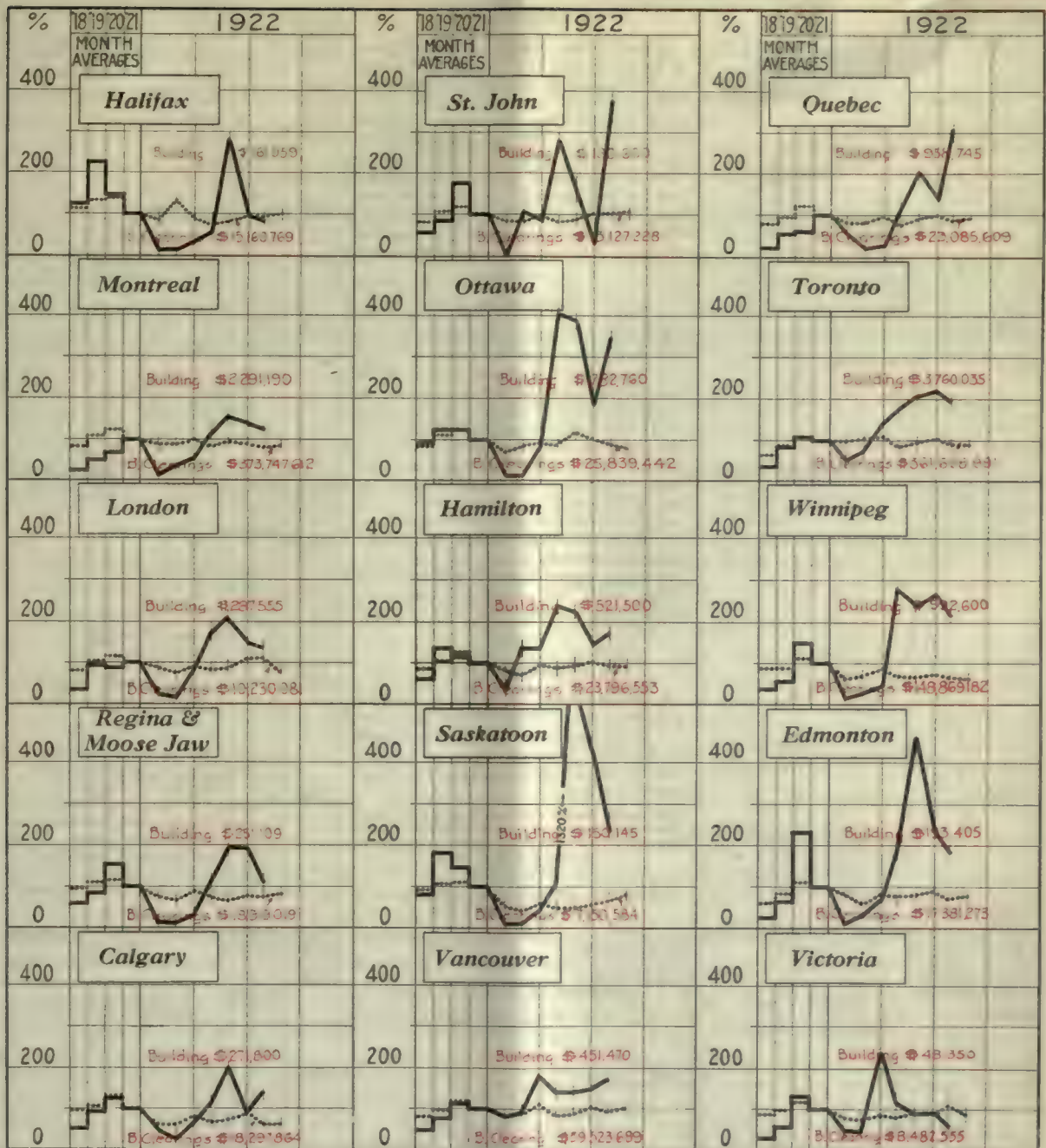
As indicated by
Building (Solid Lines)
 (Maclean Building Reports, Limited)
Commercial Failures (Dotted Lines)
 (Messrs. R. G. Dun & Co.)
Bank Clearings (Dash Line)

THE holder of Canadian securities or properties will, on the whole find conditions as reflected in the above charts satisfactory. The wholesome, though unpleasant process of weeding out the weak and ill-designed enterprises as indicated by the Failures (dotted lines) continues but is probably near its peak. The contract-letting season is now well over for the year and the Solid Black lines, representing the course of Building Activity, subside. The Dash lines, that is, Bank Clearings need not however be expected to move down with the decline in the Solid line any more than they rose with the rise in Building. This is of course because the sums specified in the contracts for building are spent gradually and their effect on Bank Clearings is spread out over the months.

The somewhat sensational rise in the Dotted line in Quebec District (Commercial Failures) is largely due to the arrangement finally reached by a large industrial company with its creditors. This item alone amounts to over four millions of dollars. It is to be remembered of course that this sum—as indeed all sums posted as liabilities of Commercial Failures—is Gross.

In the above charts the average monthly figure for the last completed year (1921) has in each case been taken as 100; the monthly averages for previous years and the actual months figures for the current year are expressed as percentages below or above.





Conditions in Principal Cities

as indicated by

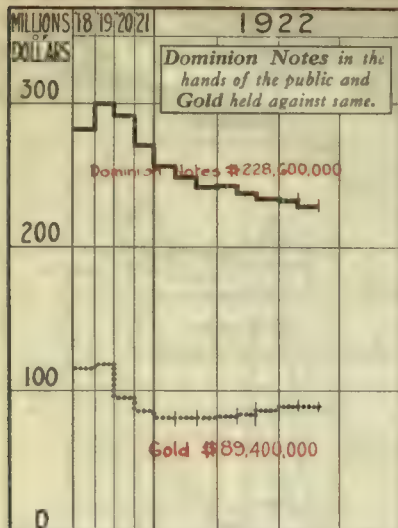
Bank Clearings (dotted lines) and Building Construction (black lines)

CONFIDENCE in Canadian municipal or school securities grows daily stronger among foreign investors as the business activity of towns and cities recovers. The vital importance of safeguarding their credit reputation and of holding and strengthening the confidence of the investor in the integrity of the Canadian borrower, is nowhere better understood and respected than among the Canadian municipalities small and large. Any disposition on the part of isolated communities to postpone the meeting of their obligations, however rashly entered into in pre-war years is rapidly dissipated under the wholesome pressure of general public opinion. The controlling element in the making of Canadian public opinion is either Anglo-Saxon or French-Canadian, persons of other origin and less substantial tradition have little or no voice in leadership. Perhaps for this reason "Red Radicalism" and

other forms of agitation imperilling order and security have made probably less headway in Canada than elsewhere. To Canada the need for capital and the friendly regard of foreign bankers appears second only to the need for increased population. There is consequently no safer country in the world in which men and women may invest.

THE above charts of city conditions indicate steadiness. There is no unwholesome "boom" tendency on the one hand, nor decline on the other. Bank Clearings are still below last year's average for the whole country, but are rising in most cities. The volume of business represented by these clearings is probably higher than last year, but appears otherwise owing to continued price deflation. Building Activity (the solid line) shows sturdy local confidence.

Currency



A LESS volume of money is obviously doing a greater amount of work in Canada—that is, financing a larger volume of trade transactions per dollar—than has been the case for many a year. The total circulation of paper money declines. On the other hand the amount of gold in reserve against that paper tends to rise. Taken in conjunction with the fact that the Canadian dollar, though not on a gold basis, is to-day exchangeable for an American dollar which is on a gold basis at practically par, Canada is to be congratulated.

Banking

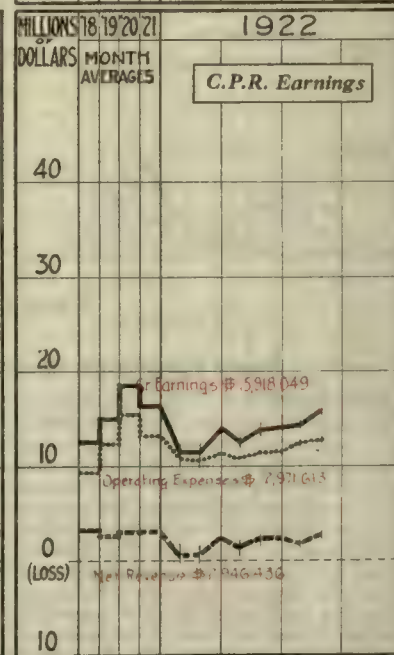
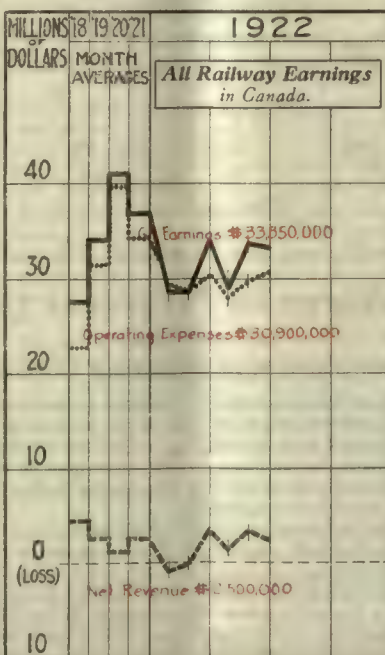
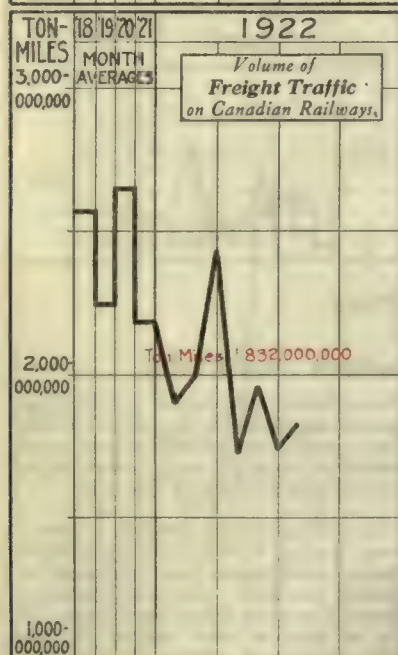
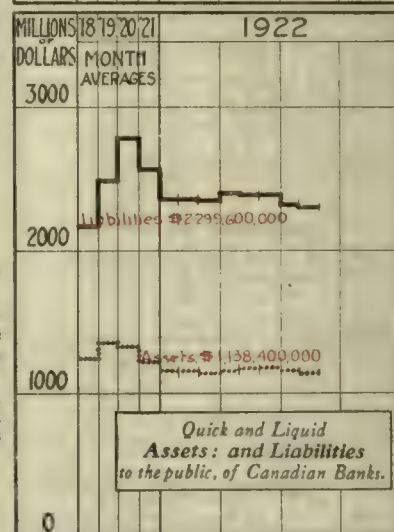
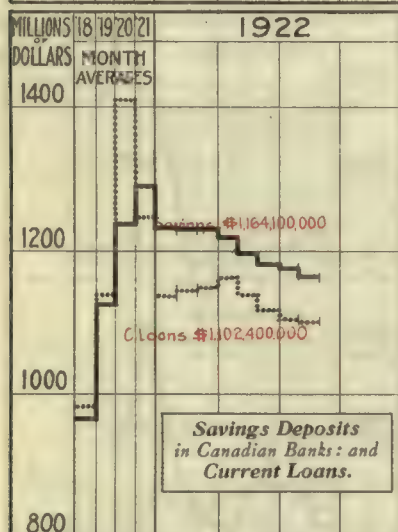
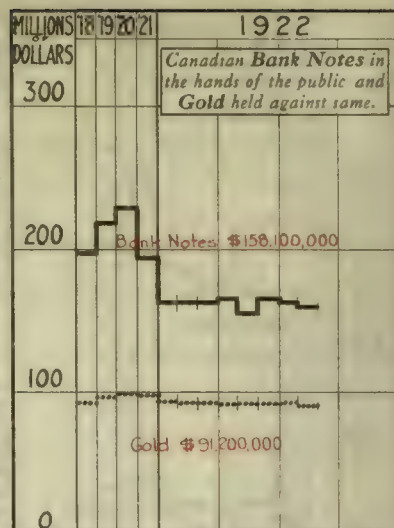
AUGUST still shows Canada's banks with more savings deposits, i.e., money to lend (theoretically) than loans. The Dotted line however is likely to pull up in the next few months and over-ride the Solid line for a time as the wheat crop calls for finance. That is the usual condition and the banks are in excellent position to meet it... The opposite chart dealing with Assets and Liabilities shows the banks in a generally conservative position. Too small a proportion of Quick and Liquid Assets to Liabilities may mean profitable banking but banking in which the factor of flexibility is low. Too high a proportion gives flexibility without much profit. The situation seems fairly between these extremes.

Railways

A MUCH greater rise in the line of Ton-Miles Carried (left hand lower charts) may be expected as the wheat crop movement is reported. Operating Expenses continue high but the outlook for confirmation of wage reduction is good.

Gold against Bank Notes is made up of three items: Specie held by Banks; and the Gold, as distinguished from Dominion Notes deposited in the Central Gold Reserve.

Saving Deposits are Deposits repayment of which is subject to Notice.



francs. Careless methods of curing led to exhaustion of supply and a dwindling trade. In 1872 the Ontario government prohibited the gathering, destroying or buying between January the first and September the first. It is therefore probably the only known plant that has enjoyed a close season.

Wild ginseng in Eastern Canada has largely disappeared, and as a result certain individuals were farsighted enough to undertake the cultivation of the plant in an experimental way some years ago. To-day it is reported to have attained such proportions that the output of cultivated roots is almost equal to that formerly collected from the forests. There is still, however, a certain importation of ginseng, whilst the export market has possibilities, and for this reason the Department of Agriculture of Ontario recently issued a comprehensive booklet on ginseng cultivation to encourage its production.

Cultivated in British Columbia

The yields of dry roots from a well-cared-for plantation will run approximately one ton to the acre, and in view of the limited market an over-production would seem imminent, but this is largely offset by the length of time required to mature the roots, these not being usually marketable until the fifth or sixth year from seeding, whilst the first crop of seeds is produced in the third year.

What is probably the first serious experimentation in ginseng cultivation in Western Canada is that conducted by T. C. Jenner on the outskirts of the city of Vancouver, who has been growing the herb over a period of seven years with gratifying ultimate success. Half an acre of land is sown to the crop, and some of the plants are now three years old, strong and sturdy and increasing in value each year. A Chinese doctor who visited his garden recently so admired it that he offered a high price for it. The garden is the more valuable because the ginseng crop originated from Korean seed and the cultivation of the crop in that country is now under government control, it being forbidden to export any of the seed.

Mr. Jenner believes he has engaged upon what is to be a profitable industry in view of the consistent demand of the market, though small. Leaves of the ginseng sell for about \$2.00 per pound. The seed sells at \$2.50 for fifty seeds. The fibre from the roots sells at from \$12 to \$15 and is used by the Chinese in their tea. The roots are worth anything from \$30 a pound upwards.

The garden at Vancouver is the only known place in British Columbia where ginseng is cultivated, and probably the one locality in Western Canada. The success Mr. Jenner has attained should encourage others to engage in this profitable small-farming enterprise. The production of ginseng has long been successful

in Ontario, the only requirements being a fairly light soil, fairly well drained, with forest leaf or other fertilizer. There must be hundreds of places in Western Canada where the cultivation of a half-acre or so of this crop would be a source of handsome revenue.

Financing the Canadian Farmer

In the development in Canada of agriculture, which is the first and most important industry of the country, the pursuit has rapidly manifested itself as a business involving the application of business practices, and it has been found necessary to provide for those engaged in it such facilities for borrowing as will enable them to have their credit requirements satisfied according to their needs. Admirable as is the Canadian banking system conceded to be, farmers complained that it was not framed to meet their special and peculiar needs, and to meet these nearly all the provincial governments have devised systems and put into operation institutions for meeting requirements for rural credits. If we are to judge by the manner these various systems have been taken advantage of and the promotion they have effected in Dominion agriculture, Rural Credits systems in Canada have been a success.

The following briefly describe the various systems, with the amount of money loaned through them, and with some variations they will be found basically the same.

The Province of Manitoba

The Rural Credits Act of 1917 makes provision for the organization by farmers of rural credit societies through which they may obtain short-term loans for productive purposes. Before commencing business the society must receive subscriptions to its capital stock from at least thirty-five persons actually engaged in farming. Any member desiring a loan makes application to the secretary, stating the purpose of the loan and submitting a statement of his assets and liabilities. If his application is approved, he is granted a line of credit for a year, and all the personal property he acquires through the proceeds of the loan is subject to a lien in favor of the society. The rate of interest payable by the borrower must not exceed 7 per cent per annum. Until March, 1920, the banks furnished the loans at six per cent, but when they decided to raise the interest legislation was passed establishing the Provincial Savings Bank, which accepts deposits from all sources and pays 4 per cent interest.

Long-term or mortgage credit is provided in Manitoba through an Act passed in the same year, which created the Farm Loans Association, to act as a loaning agent between the government and the farmers. The association is managed by a board of five members. The capital

stock is \$1,000,000 divided into \$5 shares. Every borrower must subscribe and pay cash for shares to the extent of 5 per cent of the amount of his loan and loans are secured by a first mortgage. Loans must not be for more than \$10,000, must not exceed 50 per cent of the value of the property mortgaged, and must be used solely for agricultural development. Since 1917 more than \$7,000,000 has in this wise been loaned to Manitoba farmers.

The Province of Saskatchewan

This province has no legislation for short-term credits, but an Act in 1917 provided for long-term credits, which is practically the same as the Manitoba Act. The chief differences are: (1) No maximum is stated for any individual loan. (2) All the money for the board's purposes is provided by the Provincial Treasurer. (3) First mortgages received by the board are handed over to the Provincial Treasurer as security for the loan. Up to a recent date the Saskatchewan board had completed 3,754 loans for a total amount of \$8,407,456.

The Province of Alberta

Under the Livestock Encouragement Act five or more farmers may form an association and apply to the government for a loan to be used in purchasing cows and heifers, and, if desired, the joint purchase of a pure-bred bull, which must not cost more than 10 per cent of the loan. Each member may borrow up to \$500, the money being borrowed on the joint and several notes of the members guaranteed by the government. Short-term credit is provided by the Co-operative Credit Act, which is very similar to the Rural Credits Act of Manitoba, the chief difference being that the rate of interest to be paid by the borrowers is not a fixed rate but is decided by agreement between the society and the bank as lender. In 1917 the Alberta Farm Loan Act, for long-term credits, was passed, but has not been put into operation.

The Province of British Columbia

A Land Settlement Board has been constituted under the Act of 1917 which receives advances from the Provincial Treasurer and grants loans on the security of first mortgages for any purpose which will maintain or increase agriculture or pastoral production. The minimum loan is \$250 and the maximum \$10,000, and must not be for more than 60 per cent of the value of the property mortgaged. The rate of interest on loans is arranged as nearly as possible by adding not over $1\frac{1}{2}$ per cent to the rate paid by the government. Two kinds of loans are made under this Act: long-dated loans for 15, 20, or 25 years and short-term loans for not less than 3 and not more than 10 years. A

short-term loan must not exceed \$5,000 except in special cases. About 350 loans for an aggregate of \$700,000 have been made in this province.

The Province of Ontario

In 1916 an Act was passed authorizing loans to settlers in the newer parts of the province, the maximum loan being for \$500 and the rate of interest being 6 per cent. The Co-operative Marketing Loan Act, passed in 1920, authorizes loans to co-operative associations engaged in cleaning, storing and marketing seed and potatoes. The loan must not exceed \$3,000, to be free of interest for two years, after which 6 per cent must be paid.

In April, 1921, the Agricultural Development Act and the Farm Loans Act were passed providing for the granting of long-term and short-term loans. The system for granting short-term loans is practically the same as that of Manitoba, the main difference being that in order to secure funds the Provincial Treasurer is authorized to open offices in the provinces to receive deposits and pay interest not exceeding 4 per cent. Though these Acts have been in operation only since the spring of this year, approximately \$80,000 has been loaned in short-term and \$760,000 in long-term loans.

The Province of Quebec

Assistance is provided to Quebec farmers both by short-term and long-term loans. Banks are established which constitute separate entities and operate in restricted localities. The loanable funds of a bank are obtained by receiving the deposits of the people in that section and by the sale of its shares. The value of each share is usually \$5 and is payable in small instalments of a few cents each. The social importance of the system, especially in encouraging thrift, is made a paramount feature, though the system is voluntary and members may withdraw their holdings at any time. Loans, if of small amounts, are made on the security of promissory notes, but all other loans are based on first mortgages. The larger proportion of the loans are from \$5 to \$200. Repayment is monthly. By 1920, 15,297 loans had been so made aggregating \$4,272,584.

The Province of New Brunswick

The Act to Encourage the Settlement of Farm Lands was passed in 1912, and under it a board of three members is appointed to buy farms and sell them at cost to settlers and to administer a government fund for this purpose. A catalogue of suitable farms is kept and the settler is helped to make a choice. If the price to be paid for the property is less than \$1,000, the purchaser must pay down 25 per cent; if the price is over that amount, he must make an initial payment of 35 per cent. The final

payment must be made within ten years. To date 425 farms have been so purchased, and complete repayments have been made on 171 to the extent of \$88,321. In 1918 the Act to Provide for the Purchase of Sheep was passed authorizing the government to purchase breeding sheep and resell them to the farmers of the province at cost. Three hundred loans have been made for this purpose totalling \$21,000, and in the time which has transpired since the passing of the Act the number of sheep in the province has increased by 200 per cent.

The Province of Nova Scotia

The Act for the Encouragement of Settlers on Farm Lands passed in 1912 provides that the settler who wishes to borrow must have cash capital equal to 20 per cent of the appraised or purchase value of the land, besides what he would require for house furnishings, stock, etc. The loan may amount to 40 per cent of the value of the property and in approved cases to 80 per cent, and the loan may be for as long as thirty years. The rate of interest varies from 6 to 7 per cent and the mortgagor may pay off his indebtedness at any time within the period.

Nut Production in British Columbia

Canada is yearly importing nuts to the extent of four and a half million dollars from the United Kingdom, United States, Italy, France, Spain, Dutch East Indies, Hong Kong, Japan and China, whilst possessing on her Pacific coast a region which has been proven adapted to the production of many varieties of commercial nuts. On many homesteads in the more settled sections of British Columbia a few nut trees have been planted, and although in the majority of cases neglect in culture or destruction by animals have precluded thorough tests, sufficient have survived to prove that there are possibilities for systematic nut culture in those sections of the Pacific coast province where fruit orcharding is followed. Although nut culture has not as yet received the attention it deserves from British Columbia horticulturists, a good deal of work has been done with several varieties at government experimental stations in the province.

The walnut has been grown successfully in the Province of British Columbia and numerous fine specimens of the Persian walnut are to be seen in the older sections of Vancouver Island. Walnuts have been produced which, on the authority of the California Walnut Growers' Association, to whom samples were submitted for examination, are equal in appearance, quality and flavor to the southern variety. The trees thrive admirably and produce abundantly on the roughest land, being usually planted about fifty feet apart, so that a substantial orchard can be established on a small acreage. Two hundred pounds per tree is not a large yield, which, sold at the lowest estimate of 25 cents per pound, returns \$50 per tree, or a comfortable income from an orchard of one hundred trees. In the past year Canada imported 1,455,535 pounds of walnuts, shelled and unshelled, worth \$591,369, a trade which, with the development of a walnut industry in British Columbia, could be reserved for the Dominion.

Chestnuts and Almonds

A chestnut industry in British Columbia merely awaits proper exploitation and development. Chestnuts, thriving excellently, are to be found along the Canadian Pacific coast, though, due to neglect of culture and failure to take

advantage of a natural asset, the province has no worthwhile chestnut production. Many varieties grow at their best there. The Japanese chestnut, planted as a dooryard or garden tree, is quite common, and, where a number have been located together to aid fertilization, yields have been eminently satisfactory. The Vancouver Island Experimental Station has conducted many tests over a number of years and satisfied itself as to the possibilities of provincial production. Canada at the present time imports large amounts of chestnuts from the Orient which should be supplied by her own Pacific coast territory.

Almond varieties of both hard-shell and soft-shell types have been under test at the Vancouver Island station for ten years, and certain species have proven prolific producers under coast conditions. The hard-shell varieties have shown themselves most adapted to British Columbia production, and large quantities of seedlings of commercial kinds are being produced. The almond is, as a general rule, extremely susceptible to the slightest frost, but these have been developed to withstand twenty degrees of frost during the dormant period and through the entire bloom period from two to six degrees of frost.

Filberts, Cobs and Hazels

West of the Rocky Mountains considerable success has attended the domestic cultivation of filberts, cobs and hazels. Filberts make an excellent British Columbia crop, being easily propagated by growing plants from seed, cuttings or layers. Varieties of filbert are planted at distances varying from ten to twenty feet apart, the ground between the rows being used for small fruits, potatoes or vegetables. Four-year-old trees at the Experimental Farm have yielded an average of from four and a half to seven and a half pounds per tree. At the present time the importation of filberts and hazel nuts into Canada amounts yearly to 1,319,884 pounds, valued at \$182,000.

Butternuts and hickory nuts yield well all over the province and the trees are of good size. The wild hazel grows everywhere along the Pacific coast. The trees bear well and the nuts are of a large size.

British Columbia should, in time, become the nut-producing region of Canada, for this section of the Dominion is the only one where the commercial production of a great variety of nuts is possible. Tests with nuts at the Experimental Farms of the province go as far back as 1890, and these have been so successful that there is no reason why nut culture should not have progressed beyond the desultory stage where a few enthusiastic individuals engage in it. These same farms are always at the service of growers with advice as to the best varieties to grow, and even to the extent of providing seedlings. With development and an increasing number of British Columbia farmers engaging in nut-growing this should become another phase of Canadian life in which the Dominion is independent to a large extent of foreign supplies.

Western Canada Irrigation Convention

By Jas. Colley, Secy. W.C.I.A., Lethbridge, Alberta

The increasing importance of irrigation in the agricultural and general economic development of a large part of the Canadian West was evidenced by the great success of the Sixteenth Annual Convention of the Western Canada Irrigation Association which was held at Maple Creek, Saskatchewan, and Brooks, Alberta.

Many of the delegates came from places where hitherto little interest has been shown in irrigation. They had read of the wonderful results that have followed the application of water on the semi-arid parts of the West and came to see them at first hand. They found that what they had read did little justice to the great transformation effected by irrigation, and were greatly impressed by the wonderful possibilities of diverting and using the waters of the magnificent mountain streams on the rich soil in those parts of the Canadian prairies where irrigation is possible and advisable.

At Maple Creek, one of the oldest towns in Saskatchewan and known in its earlier days chiefly as being the centre of one of the best stock-raising areas in Western Canada, the convention opened.

Addresses on various phases of irrigation engineering and irrigation agriculture were the main features of the convention there, the actual demonstration of the possibilities of irrigation farming being left for the concluding sessions.

In the Maple Creek district considerable irrigation is practised, however, and although the programme of the convention did not make any provision for organized trips into this irrigated area, many of the delegates took the opportunity to see as much as they could of the country in the limited time at their disposal between the sessions. At the present time about 50,000 acres of land are under irrigation in this part of the country. The water is supplied by numerous small systems, most of which are privately owned, and it is used largely by the large stock ranchers to increase the growth of hay. The water is comparatively cheap, and as the individual areas under irrigation are generally large, it is not used to as good advantage as it is in British Columbia and Alberta. But a better appreciation of its proper use is becoming discernible in the many excellent fields of alfalfa that were seen in all directions.

Possible to Irrigate 100,000 Acres

By the proper storage of water it is estimated that about 100,000 acres of land can be brought under irrigation to the south of Maple Creek. The locating of suitable reservoir sites for the conservation of the immense run-off of water from the Cypress Hills in the spring is necessary before this extension can be accomplished.

That the farmers throughout the district have a proper realization of the benefits of irrigation and wish to have them extended as much as possible was indicated by two resolutions that were passed by the convention at Maple Creek. One dealt with a decision reached by the International Joint Commission with regard to the division of the waters of the St. Mary and Milk Rivers between Canada and the United States. The Commission apportioned the water of these rivers and their tributaries equally between the two countries, but as it would be more advantageous to the people on the Canadian side to be able to use the flow of some of these streams exclusively and for the people on the United States side to use the whole of the water of other of the streams, a resolution was passed asking that the water in certain streams be allotted exclusively to the people of each country, the equal division of the total flow of water in the two streams being, of course, maintained.

Another resolution which two farmers put forward stated that they and many others were keenly desirous of proceeding immediately with the construction of works to irrigate their lands, and urged the Irrigation Branch of the Dominion Reclamation Service to make as soon as possible a definite recommendation in regard to the feasibility of their project so that they could proceed with the erection of their district and the completion of their system. These two resolutions are mentioned as showing that the farmers of South-western Saskatchewan are alive to the benefits that would accrue to them from increased irrigation development.

Brooks, a Prospering Community

But the real demonstration of the value of irrigation when applied to the rich lands of Western Canada was given at Brooks, where the concluding sessions of the convention were held. The town of Brooks is the centre of the Eastern Section of the Canadian Pacific Railway's Irrigation Block. Here is an immense area of more than a million acres of land, of which about 400,000 acres is rapidly being brought under irrigation. Far less than ten years ago all was open, treeless prairie. To-day the landscape is scattered with clusters of neat farm homes, surrounded by trees and brightened by flowers of all shades

and tints. Golden grain and green alfalfa fields meet the eye in every direction. Behind shelter belts of trees, the oldest of which have sprung up to a height of from twenty to thirty feet within a short period of six years, heavily laden bushes of raspberries and currants of all sorts, delicately flavored strawberries, and many other small fruits are growing in profusion. There are also tomatoes, squash, pumpkins, melons, cantaloupes, and all kinds of vegetables, from the homely potato to the aristocratic asparagus, all of the highest quality and all yielding heavily under the magic of irrigation.

The development that is taking place in Brooks and in the surrounding country was a revelation not only to those who saw the results of irrigation for the first time, but to many others who are well acquainted with the possibilities of irrigation agriculture and horticulture in Western Canada. Indeed, the manner in which everything grows in the Brooks district has been an agreeable surprise to the farmers themselves, who are continually finding that not only can they produce many crops they had not thought possible before, but also that the yields and the quality of such crops are superior to what they had previously known.

Experimental Farms Demonstrate Possibilities

The Experimental Farm of the Dominion Government where tests are being made to ascertain the amount and manner of application of water required to give the best results with many different crops under varying conditions and the Canadian Pacific Irrigation Demonstration Farm, both of which are situated close to the town, were among the places visited. The first named is operated by the Irrigation Branch of the Reclamation Service, and the result of the experiments carried on under the supervision of Mr. W. H. Snelson are already very valuable to the farmers in the district. One of the features of the Demonstration Farm of the Canadian Pacific Railway is a tree nursery in which hundreds of thousands of slips have been planted and become good-sized trees. These are to be used for further planting on the farms throughout the district.

Why Business Men should See Canada

Under the above title, The Canadian Manufacturer, in the August issue, contains an article which is of particular interest to every Canadian business man. The Easterner who has not seen the West and the Westerner who has not seen the East are working under a severe handicap.

That the Montreal business men are keenly aware of this fact is indicated in the recent tour of the Montreal Board of Trade to the West, who had, as their guests, a number of British industrial men, members of Parliament and financiers. Knowledge is power, and the soundest knowledge is that which is obtained directly by oneself on the ground, heard with one's own ears and seen with one's own eyes.

It is an extraordinary thing—nevertheless a fact—that there are in the East generally many prominent business men who, year after year, do business with the West, yet who have never personally visited it. They make frequent trips to Europe and to the United States, but when it comes to personally visiting the Western section of their own country, they "pass it" up in favor of some other trip. The United States slogan "See America First" might well be adapted to "See Canada First" by those business men who can, if they will, see more of their own country. The article referred to is as follows:—

If you would build up a national business, you should know Canada; you should understand the difference in the viewpoints of the Westerner, from that of the man in Ontario, the man in Quebec and the man in the Maritime Provinces.

To understand men one should be familiar with the conditions under which they do business. To do this, one must visit the city or town where they do business and get close enough to see in what ways conditions are different in one locality from another.

We all know that the needs of a customer in a manufacturing city like Windsor are very far different to the needs of a prairie city like Saskatoon. But to thoroughly understand, and to be in a position to answer any demand in these places, the business man should visit these places and study each one in relation to the product he manufactures.

For instance, how many business men in Canada know what towns are affected by drought in a certain district in the West? How many know what towns would be affected by a great increase in demand for Canadian paper and pulp.

One cannot know his market too intimately; and, as every one in business in Canada knows, the distances here are great indeed and the diversity of interests entail serious study to be fully understood.

Travel in Itself is Worth While

Apart from the purely business aspect of the matter, however, Canada offers to the tourist a wealth of places worth seeing:

The beauties of the Pacific coast cities and their parks, the Rockies, the Okanagan and other B.C. valleys; the prairies at harvest time, or for that matter, at a time when the crop is in; the drives around Winnipeg; the Great lakes; the Muskoka lakes; the Algonquin Park; the pastoral scenery of Ontario; Niagara Falls, whirlpool and rapids; the Niagara fruit district; the Rideau; the Thousand Islands; the drives around Toronto, Ottawa and Montreal; the Parliament Buildings and the view from Parliament Hill; the St. Lawrence and Saguenay River trips; old Quebec; the hunting and fishing grounds of New Brunswick; the seafaring life along the shores of the Maritime Provinces; pastoral Prince Edward Island; the apple valleys of Nova Scotia; the harbors and beauty spots of St. John and Halifax—and these are only high spots that come readily to mind.

Travel in itself is worth while. The business man should be, and generally is, a good mixer. On the train or boat the good mixer soon meets men and women worth knowing. The consequence is a mental rejuvenation, or brushing up, that is good for any man.

One thing is sure, the man who starts out to see Canada is going to come home an enthusiastic believer in his own country and an optimist as to the future of his own business.

Wheat Export Prospects in 1922

Harvesting operations are well under way in Western Canada, and with every assurance of a wheat crop second only to that of the bumper year of 1915, attention is drawn to the finding of possible markets for the disposal of this huge yield. It is conceded by competent authorities that the Canadian wheat yield this year will be well over the 300,000,000 bushel mark, and of this quantity approximately two-thirds, or 200,000,000 bushels, will be available for export. A survey of the world wheat situation shows that the United States also will have 200,000,000 bushels to export, while Australia and Argentine combined will have a similar quantity to export, making in all a total of 600,000,000 bushels from the principal grain-producing nations of the world, to meet the demands of those countries which find it necessary to import wheat.

Europe is the principal market for the sale of wheat, and according to the latest estimate of the United States Department of Agriculture, the requirements of that market this year will be 582,000,000 bushels. Reports

from all sources regarding Russia said crop conditions were favorable and the yield would feed the nation this year. Nearly all European countries, however, reported decreases, the total European production being estimated at 1,100,991,000 bushels, compared with 1,239,256,000 bushels in 1921, and pre-war average of 1,275,157,000 bushels.

Export Effect of U.S. Tariff

Canada will undoubtedly supply a large portion of this demand. In addition the United States annually imports a large quantity of Canadian hard wheat, which is mixed with American soft wheat in the manufacture of flour. From a purely milling standpoint Western Canadian hard wheat is worth from 7 to 10 cents per bushel more than the best the United States can offer, and importers are consequently keen for Canadian hard wheat. While the United States tariff has had a detrimental effect on shipments of Canadian wheat for consumption to the United States, exports in 1920 amounted to the respectable total of 49,213,551. The British Dominions, such as Newfoundland, West Indies, etc., offer another market for Canadian wheat, and Japan, whose imports prior to 1921 were practically negligible, entered the market that year and purchased some 6,000,000 bushels. Judging from inquiries regarding the 1922 crop received from Japanese importers, there is every reason to believe that shipments to that country will continue unabated this year. From the foregoing it would appear that there will be a demand at least equal to the supply of Canadian wheat.

The marketing of this huge quantity of grain requires a smoothly working machine, which can be depended upon at all times to function with despatch and efficiency, and Canada undoubtedly has one of the finest grain-handling systems in the world. Ten companies handle the export wheat trade of the Dominion. These companies are all members of the Winnipeg Grain Exchange, which has a membership of 335, and are engaged in trade through interior elevators, milling companies, or in conducting lake terminals, where they sell 'spot' to the elevators. There is also a grain exchange at Calgary, and recently there has been considerable agitation for the establishment of an exchange in Vancouver.

Elevators and Grain Storage Facilities

The grain storage facilities of Canada are unsurpassed. In the three Prairie Provinces alone there are 3,840 line elevators, with a capacity of 231,213,620 bushels, of which number 689 are operated by two farmers' co-operative companies. There is another group of elevators, the 498 elevators operated by the milling companies, which with the co-operative companies provide competition for the line elevators. In addition there are 1,914 loading platforms in the three provinces. At Fort William and Port Arthur there is accommodation for the storing of over 58,000,000 bushels of grain, the largest grain storage capacity of any port in the world.

Three transcontinental railways, with branches in all parts of Western Canada, as well as the St. Lawrence River route, provide Canadian grain exporters with transportation facilities unsurpassed on the American continent. Grain can be loaded at Fort William and Port Arthur, several hundred miles from the Atlantic seaboard, for shipment to Europe at a very cheap rate, thus giving Canadian exporters an added advantage over their neighbors to the south. Prior to 1914 a large share of the Canadian wheat exports went out by American ports, but this condition is gradually being reversed, and recent statistics show that in 1919-20, out of 61,369,052 bushels exported, 48,345,771 went out by Canadian ports, the balance by American ports. In 1912 the figures were 64,466,286 bushels total exports and 55,507,853 bushels by American ports. During the 1921 season the Port of Montreal alone handled over 140,000,000 bushels of grain, a volume in excess of all other ports in America, including the Port of New York.

Utilizing Grain Screenings

Last winter saw an innovation in the feeding and fattening of livestock which, judged by the successful results of the initial venture, may constitute a new industry of important proportions and have considerable bearing on the problem of winter feeding of range animals in the Canadian West. This is the utilization of grain screenings and cleanings at elevators, which previously had no economic value and were considered in elevator operations as waste products, but which have now been proved to contain valuable food properties. Not only does this mean considerable to Canadian livestock interests, to whom winter feeding is the most pressing and expensive problem, but it should result in a vastly enhanced prestige to terminal elevator ports by adding to them a new industry of very elastic possibilities.

Last winter R. C. Harvey, of Lethbridge, in Southern Alberta, stated to be the largest individual sheep rancher in Canada, leased a large warehouse on the Kaministiquia river at Fort William, Ontario, and early in November brought ten thousand sheep from his Alberta ranges to the lake port. All winter they were fed on screenings from the various elevators, procured for next to nothing. This was merely an experiment in feeding, but proved in all respects a complete success. The animals thrived and gained steadily in weight, being marketed in the spring at good prices at Toronto and Buffalo.

According to announcement, Mr. Harvey will this winter continue this method of feeding on a much more extensive scale, and plans to bring some fifty thousand sheep from his Alberta ranches to the Fort William elevators before the snow has enforced winter feeding in Southern Alberta. His experiment was watched with intense interest last winter by Western ranchers, and others with large flocks of sheep, it is expected, will follow the example he has set and send sheep to various terminal elevator points for seasonal feeding. There is likewise a possibility this year of the new method of fattening being extended to hogs.

Building up a Substantial Industry

The initial success in the utilization of elevator screenings had other results, and drew general attention to the possibilities of building up a substantial industry along these lines. A Vancouver syndicate has been organized to enter the business commercially and finish sheep and hogs on the screenings of Western elevators, and the project has the approval and endorsement of elevator and packing men on the Pacific coast. With the growing importance of Vancouver as a grain shipping point, with a continual enlargement of terminal elevator accommodation, there are great possibilities for

this method of winter feeding on the British Columbia coast, where the excellency of the winter climate alone would make the region a formidable rival for the business with the lake ports and other terminal points.

Without any additional expenditure and in the utilization of hitherto wasted products, the new industry should give Canadian terminal elevator points a new importance by adding to their winter activities, which for the main part are at a low ebb with the closing of summer navigation, as well as materially assisting the livestock breeder in what is each year his most crucial problem. The accumulation of grain screenings at these points is tremendous, and these supplies, which have been proven to contain high values, can be obtained very cheaply. Cleanings contain a good deal of nutritious matter as well as a percentage of weeds which make good fattening food. To obviate any weed menace through promiscuous scattering, it is planned to centralize flocks in feeding centres where every precaution can be taken.

There are scarcely any limits to the industry foreshadowed. It should proceed in importance apace with Canadian grain production and terminal elevator accommodation. Both are increasing rapidly. The American tariff sending a much greater volume of Canadian grain exports to Canadian ports has created a most urgent need for additional terminal accommodation, which the active construction operations of the summer have endeavored to more adequately meet at Montreal, Vancouver and the lake ports. With the developments of Canadian ports under way at the present time and the greater storage space assured, Canadian outlets will handle Canadian grain to an ever-increasing extent in the future, ensuring a large supply of this hitherto wasted food product.

The Imperialism of Canada

By Sir R. Burton Chadwick, M.P.

I have been in Canada for a short, 'all too short month, and every day of that month the question has been put to me—"What do you think of Canada?"

Well, I am now sailing away on the *Empress of Scotland*, and perhaps some of the many friends who have been so good to me may be interested in my reply to the above question.

I am too old a traveller to be lured into the belief that after a few weeks' sojourn in some place of interest an eager public awaits an account of one's experiences. Less experienced, I might fall, as so many have fallen, to the temptation of writing a book, and the world would be enriched and Canada uplifted by something such as—"A Jaunt through"—"Wanderings in"—"The Awakening of"—or I might even rise to the ponderous dignity of "Canada."

In my case, the title "When Winter Comes"

would be significant, but perhaps a little indelicate and shabby in a coal merchant who has been using the slogan in an endeavor to succour Canada in her extremity. I may sell coal, but at least I can sell it as a gentleman.

Nor will I attempt to survey the great questions which are before Canada and before the British Government in relation to Canada at the present time. One may spend a lifetime and gallons of ink and contribute very little in the attempt to treat these vast subjects if one takes them too widely. I am for the moment a member of the British House of Commons, a privilege of which I am proud, and from the back benches of that historic chamber I take my humble part with some 700 others in the administration, or mal-administration, of some of the affairs of all of the four hundred odd million people comprising the Commonwealth of Nations known as the British Empire.

Realizes the Possibilities and Opportunities

I have only been in Canada for a month, but in that time I have had the great advantage of meeting many Canadians—distinguished and undistinguished—in all walks of life from Prime Minister to laborer—and even golfers, and I have learned a great deal, particularly about Eastern Canada, and I return to London impressed more than ever with the resources, the opportunities, the possibilities, the untapped wealth of this vast Dominion, but realizing as never before, and as it is not possible to realize looking across from England, two great factors,—namely, the magnificent imperialism of the Canadian people and their intense desire for closer relationship, socially and commercially, with the Old Country.

One may be told that one need not look further back than 1914 for more than ample evidence of this, and it would be perfectly true. But the war is now passing into history, and the terrible trials and hardships of the aftermath through which we are passing are so absorbing that there is danger of our vision being obscured and of our failing to appreciate and respond.

The opportunity to visit Canada comes to relatively few of the forty-five millions of our people, and therefore I feel that those who are fortunate enough to be able to see and learn for themselves, particularly if they are men and women in public life, carry a great responsibility.

Montreal's New Industrial Area

A new and promising industrial area has just been opened up in Montreal. The town of LaSalle, lying close to the heart of the city, which has remained industrially neglected during the years less advantageously situated areas have progressed in Montreal's industrial development, is now to come into its own, and is assured of a development which, taken in conjunction with its natural commercial assets and advantages, ensures for it a future of industrial activity which will be unsurpassed as a manufacturing sector on the island of Montreal. This assurance has but quite recently been given in the con-

struction and completion of what is known as the "LaSalle Loop" of the Canadian Pacific Railway Company, a branch railway line which runs from Cote St. Paul, on the outskirts of Montreal proper, to Highlands, adjacent to the bank of the St. Lawrence River, thence returning to Cote St. Paul by way of the south bank of the Lachine Canal.

Managed by a Go-ahead Council

The town of LaSalle, a separate municipality, though intrinsically a part of Greater Montreal and nearer to the heart of the city than many sections of the city proper, has been hampered in development in the past by lack of transportation facilities, a drawback which resulted in its being passed over by manufacturers in favor of more remote and less fortunately situated areas. The eastern limits of LaSalle, for instance, are less than four miles from the centre of the city of Montreal, its business, financial and postal hub, or less than half the distance of the industrial area of the eastern end of the city, where manufacturers in the past few years have flocked in numbers.

Admirably Located for Power and Transportation

On the north-west, LaSalle touches the industrial city of Lachine, and on the north, for a distance of three and a half miles, the Lachine Canal, which is capable of supplying water to large industries. It is bounded on the east and south-east by two of the most important industrial sections of the city of Montreal. Its southern and south-western limits is the River St. Lawrence, just at the head of the Lachine Rapids. The situation of the town is, in fact, ideal, its principal handicap in the past being that the greater part of its area was virtually cut off from the city by lack of transport facilities, in which respect it had been seriously neglected.

The new railway loop operates through the heart of the town and opens up a practically virgin territory of some 4,675 acres to industrial establishment, giving the area the one essential it previously lacked in the eyes of manufacturers. This line, which adequately serves the territory, connects with the Canadian Pacific main line at Highlands, a line which is also used by the trains of the New York Central Railway and Delaware and Hudson. The canal itself, which is in reality a prolongation of Montreal Harbour, provides excellent water transport facilities. Good main roads already radiating from the town in all directions give it adequate and rapid touch with all sections of the Canadian metropolis.

Site Level and Well Drained

Not a factor would appear to be missing which might in any way contribute to LaSalle's destiny as one of the first industrial sections of Montreal Island. The entire area is level and well drained. Further roads and sewerage are assured to serve new industries locating. Factory sites are the cheapest on the island of Montreal. Water to any extent is assured. The Lachine hydraulics, located within the town limits, ensures the delivery of power at low rates, a provision which is guaranteed by a twenty-year contract with the town. A partial exemption from taxation is granted manufacturers locating there.

No slight consideration is the provision of labor. The Quebec labor market is the admiration of the American continent, and in this respect LaSalle is in a particularly enviable position. In the areas immediately tributary to the town is a population of 65,000 industrial workers of the most desirable class. An additional supply of labor is available from the Caughnawaga Indian reserve across the river, a class of worker which has already definitely proven its value in industries already established within the area.

At the present time passenger travel over the new Loop Line to and through LaSalle is provided for by a motor-propelled passenger car making connection with the Montreal Tramways at Cote St. Paul and operating over the six miles of line to Highlands, a journey occupying less than half an hour between terminals. This brings

employees from the City of LaSalle and vice versa, and assurance is given of further facilities to plant workers when developments warrant an augmented service. With the development of the area industrially, too, there is little doubt but that a fine residential section will be available to factory workers and others in the vicinity of the north bank of the St. Lawrence River, a location which possesses peculiarly ideal living conditions, set as it is in a charming countryside with the broad vista of the river uninterrupted. Arrangements are now under way for the construction of working men's houses.

Already Several Industries Located

LaSalle has been merely waiting the provision of a railroad to open it up as a peculiarly desirable industrial area, and it should not be long before other industries come to join those already there, such as the Montreal Light, Heat & Power Company, the immense gas works of the same company, N. K. Fairbanks Company, Ltd., Standard Paint Company of Canada, Ltd., G. & J. Weir Pump Company, Ltd., and the Dominion Tar Products, Limited, Canada Tube & Iron Company, Ltd., Canada Tube & Steel Products, Limited, etc. In the area on the other side of the Lachine Canal, no more desirable than LaSalle with its railroad, such titanic industries have found suitable locations as the Canadian Car & Foundry Company, the Dominion Bridge Company, the St. Lawrence Bridge Company, Canadian Allis-Chalmers, Limited, Dominion Wire Manufacturing Co., etc.

In view of the favor with which Canada, and particularly Quebec Province, is being regarded by foreign manufacturers seeking locations for branch factories to engage in the Dominion domestic and export trade, there can be little question as to the real need of the new addition to Industrial Montreal. The Canadian metropolis has in recent years made phenomenal progress in manufacturing importance and is continuing to ascend in this regard by heavy annual increments. The city's value of industrial production in 1905 was \$718,352,603. Ten years later it was \$1,165,975,637. In 1918 its industrial output was valued at \$2,182,440,759. Between 1905 and 1918 there was an increase of 343 per cent in the value of the city's manufacturing output. Since 1918 there has been a further substantial growth, and this is increasing at, if anything, a more rapid rate. LaSalle in achieving an industrial development for itself must add to the commercial prestige of the first Canadian city.

Outlook in Western Canada

*By John F. Sweeting, Industrial Agent, C.P.R.,
Winnipeg, Man.,*

Western business is broadening out—the promise of the summer has been fulfilled to a great extent—showing that the past tightening of credits and restrictions on trading have been beneficial in turning public attention to the necessity of such action. It has resulted in efforts being made to put the house in order and thus develop a prospect for taking care of outstanding claims and debts from the abundant yield of the 1922 prairie grain crop. There is much yet to be done, but confidence has been restored, and with it people are again alive to the possibilities of Western development.

It would appear that more enlightened ideas are to prevail in connection with the settlement of Canadian lands, as well as in fostering industrial growth and dealing with valuable natural resources, three very vital factors, the neglect of which has very considerably hampered

expansion in the past. It is difficult indeed to say to what extent action is belated, but progress now should be sufficiently active to enable results to be of a noticeable nature.

During the past months all classes of agriculture have been actively employed in getting in grain, fruit, roots, hay and other crops. There has been some increase in construction activities and general contracting business. Merchandise is beginning to move more freely with a tendency of the consumer to take care of winter requirements. There is yet room, however, for more active business, with a promising outlook.

A great deal of activity has been shown during the year in oil exploration work in Southern and other parts of Alberta. The construction of an oil refinery by the Imperial Oil Co. at Calgary is indicative of expansion in consumption of this product, bringing with it the added advantage of refining the crude oil in the West as against importation of refined oil. The results of drilling operations are as yet of little importance, but investigation will continue. The Governments, Dominion and Provincial, are continuing exploration work, and valuable reports on various natural resources have been and are being prepared. The situation in this regard has advanced with very satisfactory results in the last few years, giving the investor data of value on which it is possible to gauge prospects for development and investment of capital.

The pulp and paper industry in the interior is rapidly increasing its capacity by construction of the new mills at Port Arthur and Fort William, the enlargement of capacity at Dryden and the new mill at Kenora. Prospects are for the construction of large capacity mill near Elko, B.C., while the Coast mills have been showing good results.

Many other manufacturing industries are showing good business. Flour mills are active; iron foundries and metal works to capacity; glass works show increase, and garment factories of all kinds have had a good season. Wholesale trade is improving, collections slightly better and the retail trade prospects good. This being the present situation, one is justified in expecting a good fall and winter trade.

Fur Auction More Firmly Established

The seventh periodic Canadian fur sale was held at Montreal in the middle of September, at which half a million raw pelts were disposed of for an amount totalling \$1,500,000, making the total receipts of the sales since their inauguration in 1920 in excess of \$13,000,000. In its every trait this last Canadian sale has given further and more convincing evidence of the definite and permanent establishment of the national fur auctions, their ability to assemble what is undoubtedly one of the finest aggregations of

raw peltry in the world, and power to attract discriminating purchasers from all over the world. In the opinion of those best entitled to make forecasts in an industry subject to the most inconsequential vagaries, the national Canadian fur auction is now permanently and securely established and a foundation has been laid sturdy enough to withstand the tempests to which the industry is frequently subject.

As at previous sales, the important status of the Canadian auction was widely recognized by both vendors and buyers. Furs for disposal came in increasing volume from all countries producing raw peltry, from all over the Canadian Dominion, the United States, Russia, Siberia and other countries. The September sale saw the gathering at Montreal of the largest number of fur buyers since the inception of the Canadian market, itself sufficient indication of the growing importance of the sales. Some three hundred were present, seventy-five per cent being from New York, others from Canadian centres, and representatives of English, French, German, Swedish, Russian and Japanese houses.

This growing tendency of foreign buyers to come to Canadian sales is the best indication of their permanent character and firmness of establishment. American and other foreign buyers generally voice complete satisfaction at the manner in which the Montreal sales are conducted, their sound business methods and satisfactory conduct throughout. Their opinion is fairly unanimous that the past seven sales at Montreal have laid the secure foundation of a permanent national fur auction which will progress without fear of successful assailment. Whilst it is recognized that, in common with many other Canadian enterprises, the Canadian sales may lack the unlimited finances available to similar concerns elsewhere and this results in certain handicaps of a minor order, foreign buyers point out that Canada possesses many varieties of furs which are not procurable elsewhere, and as long as she holds them within her confines she can draw the world's buyers, who will come wherever they can secure what they want. These handicaps are not sufficient to appreciably draw away from the flow of raw peltry to Montreal. Compared with the status and operation of fur auctions elsewhere on the continent, foreign purchasers of furs express the most entire satisfaction with the Montreal sales.

The tendency in the prices paid at the September auctions was considerably higher than at the previous May sales. This was due largely to a smaller volume of offerings and the general belief that there were no accumulations of skins anywhere. The keen demand for peltry at the present time is evident in the fact that ninety per cent of the skins offered for sale were disposed of. In the opinion of the largest buyers the tendency to rise will exist for some time, at least until the next winter's catch comes in.

Regarding the winter's catch, it is too early in the season to make any predictions as to volume or quality, which will not disclose themselves until the fall of the first snow and the commencement of trapping operations. Irrespective of these two factors, however, it is apparent from the foregoing that good figures will be procurable for the winter's catch, and the season will undoubtedly be a profitable one for the trapper.

Across Canada—Moose Jaw

About fifty years ago Lord Dunsmore, travelling with his wife and child across the vast plains of Western Canada, camped on the bank of what is now known as "Thunder Creek" and mended a broken wheel of his "Red River" cart with the jawbone of a moose. The ingenuity exhibited struck the imagination of the Indians, who ever afterwards referred to the spot as "the place where the white man found the moose jaw." The name clung when, years afterwards, a tiny settlement located there and later when it developed into a village, and the unique and distinctive appellation has been retained by the prosperous and rapidly expanding city which now covers what was bald prairie such a comparatively short while ago.

The reason of Moose Jaw is wheat. It is one of the centres of the richest wheat-growing areas of a province that produces more than fifty per cent of the Dominion's total wheat crop. The district produces seventy million bushels of wheat annually, and yet its productive capacity has scarcely been touched. From Moose Jaw into all sections of this rich productive district run life arteries of communication, and with the development in view for this area from the agricultural standpoint, the city has a promising growth in sight.

On Main Line of C. P. R.

Moose Jaw is situated on the main line of the Canadian Pacific Railway in Saskatchewan about midway between the cities of Brandon and Calgary. This company has seventy miles of track in its yards there, and recently completed a new depot at a cost exceeding three-quarters of a million dollars. In all eight railroad lines radiate from the city. As a grain centre the Dominion Government located there its elevator with 3,500,000 bushels capacity, and a tribute to the range country to which it is tributary was paid by the provincial government, which selected it as the site of extensive co-operative stockyards.

The city has a population of 25,000. Two hundred acres have been laid out as parks, and cleanliness and beauty are the distinctive features

of residential and business sections alike. The city, in fact, belies its conditions of a prairie city, and the traveller rushes from the bald brown plain into groves of trees and shady boulevards. Educational facilities are excellent, and there are more than twenty churches, ten hotels, modern hospitals and all the complements of a modern go-ahead city.

One of the city's prime phases of importance is naturally as a distributing centre, and the area it serves is already well settled, prosperous, with excellent railway facilities, yet with assurance of a constantly expanding market. By the city are served two smaller cities, twenty-five towns, one hundred villages, and one hundred and twenty-five hamlets. Included in the commodities leaving Moose Jaw are the multifarious requirements of these farming settlements, whilst consistently coming into it are the valuable and various agricultural products which have made the area widely renowned.

Increasing in Industrial Importance

Moose Jaw is making a steady bid for industrial fame and is coming each year to supply the district it serves with the products of its own factories. At the last returns there were 101 industrial establishments in the city, which, with a capitalization of \$5,471,411, ranked as the second centre of industrial manufacturing in the province. A total of 1,856 persons found employment in these plants, receiving an annual sum of \$2,135,622 in wages and salaries. The year's production was valued at \$18,005,370. The flour-milling industry is important and there is a large abattoir. Other industries are pressed brick, faced brick, tiles and pottery, candy factory, creamery, iron foundry and oil refinery.

From all points of consideration Moose Jaw has an appeal, as a centre of assured growth, for new industries, there being special advantages for additional flour mills, woolen mills, wholesale houses, tannery and a soap factory, automobile assembling plant, farm machinery warehouses and abattoirs. The city owns its light street railway, water systems and sewerage with incinerator plant, and electric power is procurable at low rates.

In the possibilities of development which yet exist in the area and which are annually being taken advantage of, Moose Jaw must become a greater city and grow up with the West to be one of its prosperous centres.

Canada's Tourist Traffic

Among the resources of Canada, productive of revenue, should be listed the country's scenic beauty, its historic charm, the wonders of its virgin freshness and such other intangible assets as combine in attracting a purely tourist and holiday traffic to its confines. Canada possesses the lure of many countries rolled into one, with every kind of beauty from the simple rural charm of the Maritimes to the rugged, majestic grandeur of the Rockies, and opportunities for every manner of holidaying, and the proper exploita-

tion of her attractions and the rendering easily accessible the points of special beauty and interest, are bringing to the Dominion a greater number of holidayers and sight-seers each year. And Canada's resources in this respect have only begun to be developed. In her climate, her forests, her lakes, her big game, her fishing, her picturesque Indian and French Canadian traditions, her great fertile prairies, she has natural attractions capable of practically unlimited development.

As a result of the greater advertising done by Canadians, and no less that done by returning tourists, as well as conditions arising out of the war, the past few years have seen a practical doubling annually of Canadian tourist traffic. "See America First" has been the popular slogan of United Statesers, and Canada is being discovered by increasing numbers as the continent's playground. Tourists having made the discovery, have returned to bring their friends with them next year, and the greatest tribute to the multifold attractions of the Dominion as a holiday centre is contained in the steadily rising figures of visiting tourists from the United States.

According to the Department of Customs, 617,825 cars entered Canada for touring purposes during the calendar year 1921. The total number for 1920 was only 93,300, so that the past year showed an increase of 523,985 for the twelve months, an almost unbelievable increase of more than five hundred per cent. The registrations according to provinces were: Nova Scotia 223; Prince Edward Island 22; New Brunswick 1,826; Quebec 43,264; Ontario 537,283; Manitoba 8,020; Saskatchewan 427; Alberta 363; and British Columbia 25,957.

A Revenue of Over \$100,000,000

Of this total number of visiting automobiles it is estimated that 615,074 remained in the country for less than one month and 2,211 for a period of more than one month and less than six months. Allowing for an average expenditure of \$25 a day, including gasoline and garage charges for the first class of car and an average length of stay of seven days, this traffic represents an expenditure of over \$107,000,000, while the second class of cars on the basis of an expenditure estimated at \$20 per day for thirty days was worth approximately \$1,326,600. This means that the motor highways of Canada brought in a foreign revenue last year of something like \$108,000,000. Estimated on a five per cent basis it means that improved roads are worth over two billion dollars to the country without taking into account the service they render Canadians themselves.

This year Canadian tourist traffic has shown substantial increases over the previous season. It is estimated that American tourist traffic will bring more than \$12,000,000 to the Province of Quebec alone during the summer and fall. The estimate is based on a volume of 60,000 visiting parties representing approximately 250,000 persons. Quebec confidently anticipates a tourist traffic of one million people within a few years, meaning an annual revenue of \$50,000,000 to the province, considering that so far the merest possibilities of the traffic have been scratched. So great is Quebec's attraction that last year traffic to the province accounted for fifty per cent of the total tourist traffic of the Dominion.

The increase in the tide of holidayers to Canada in the past few years cannot be more aptly illustrated than in the swelling volume of visiting cars Quebec welcomes annually. In 1915, 3,430 cars came holidaying in the province. In 1916 there were 7,581 cars; in 1917, 9,429 cars; in 1918, 9,177 cars; 1919, 18,105 cars; 1920, 31,918 cars; and in 1921, 41,957 cars. The average party per car is estimated at four. Of these parties only 25 per cent spent one day in the province, the remaining 75 per cent staying two days and upwards.

150,000 Visitors to National Parks

The same tendency is noted in the case of the Canadian National Parks, where tourist traffic is increasing sub-

stantially each year. In 1921 it was estimated by officers in charge of the ten parks that visitors during the season totalled 150,700. An analysis of this traffic reveals that from 50 to 60 per cent of the travel to the resorts of the Rockies is from foreign countries, the total number of foreign visitors to the parks of the Rockies in that year being approximately 50,000. Allowing an average expenditure of \$300 for each foreign visitor, this travel represents an indirect revenue to the country of \$15,000,000. Capitalized on a basis of a five per cent dividend it means that the mountain parks alone are worth \$300,000,000 to the people of Canada, not taking into account the money the parks keep at home by providing Canadians with unequalled recreation and pleasure grounds or the direct revenue derived from park licenses, etc., which in the same year amounted to over \$81,000. The total appropriations for all parks last year was \$720,000, or the entire cost of maintenance and development was less than one-quarter of one per cent the capitalized value of foreign tourist traffic. The total expenditure for national parks since 1896 has been a little over \$5,000,000, or in the 25 years a little more than one-third of the foreign revenue which the mountain parks brought into the country last year.

To maintain and increase this traffic the construction and constant upkeep of good roads is necessary, and the Dominion is endeavoring to make her expansive domain the equal of older countries in this regard. To this end, in the five-year period ending 1924, Federal and provincial governments are expending the sum of \$50,000,000 for this purpose, and at the expiration of this period doubtless the grants will be extended to keep pace with the growing traffic. Each year additional roads are being opened up, giving access to fresh points of beauty and interest, while tourists returning to their own countries do Canada's advertising and come back on the following year in the company of others whom they have fired with a desire to see Canada's wonders.

McGill and French Study

This summer McGill University at Montreal resumed its holiday course in the French language for the first time since the interruption caused by the outbreak of the war. Students attended from all parts of the American continent, from points as distant from Montreal as Virginia, Kansas and British Columbia, and of the eighty-three students to register fifty-one were from across the international border. A Minneapolis student took the first honors in the examination which terminated the course, and of six others to pass with distinction two were from the Republic.

Closely following the closing of the course and the dispersion of the students came the offer of a French scholarship by the French government for the year 1922-23 for a student of McGill University. The scholarship, which is for the sum of 6,000 francs with an additional 1,000 francs for travelling expenses, has been placed at the disposal of the Principal of the University "in recognition of the considerable efforts effected by McGill University toward the development of the French language." A subsequent announcement contained notification of the extension of scholarships of similar amounts to Montreal University and Laval University at Quebec in Quebec province and Toronto University and Ottawa University in Ontario.

The French government's award is a well-

merited tribute to what McGill has been accomplishing in the promotion of the study of the French language on the American continent, and the Montreal university is coming, to a greater extent every year, to be regarded more widely as America's centre of French erudition. McGill has long had a fine appreciation of the value of the inclusion of French in a University course, of the economic value of this linguistic accomplishment, and the beneficial effect of Latin influence upon the predominating types of the continent. It has been peculiarly fitted to work to this end—an English university, situated in the heart of the Canadian metropolis, and in a province where eighty per cent of the population employ the French tongue and whose boast it is they have maintained the language through all the centuries in all its purity.

The Post-Graduate Courses in France

The scholastic courses at McGill and the new scholarship France has donated to the University will have the effect of further cementing the already firm ties which already bind Canada and the French republic. Not alone through her early history and the presence in Canada of nearly three million people conversing in the tongue of Molière and existing in the utmost harmony with their English brothers, is Canada bound to France, but through the stirring days of more recent times, which gave each people a clearer and more sympathetic understanding of the other. The permanency of this understanding is assured.

As the yet firmer cohesion of the British Empire is effected by the system of Rhodes scholarships, the young men who are the leaders of Dominion thought and action to-morrow given an understanding of other peoples and their problems through scholastic intercourse, so is the clearer mutual sympathy of France and Canada being brought about by a similar interchange. Through action taken by various provincial legislatures Canadian graduates have the opportunity of taking post-graduate courses in France. Most of the Canadian provinces have provided for a permanent annual appropriation of \$6,000 to cover five yearly scholarships of \$1,200 each, and numerous Canadian students are now in France taking various courses, art, literature, forestry or agriculture.

Technical Education in New Brunswick

*By Fletcher Peacock, Director of Vocational Education,
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Vocational Education as a public service on this continent is new and in New Brunswick it has just arrived. The Vocational Education Act of the province, which has been in operation only two years, is a comprehensive one, including agricultural, industrial, commercial, fisheries and home economics training in its scope. It is administered by a provincial board appointed by the government, and local vocational committees appointed by the local school boards. The central board includes the Chief Super-

intendent of Education, the Principal of the Normal School, one farmer, one manufacturer and one business man. The Hon. Fred Magee is the present chairman. Local vocational committees must include an employer of labor, an employee and a housekeeper. Thus, both in the central and local administration the fields to be served are directly represented.

In New Brunswick not more than 15% of the adolescents enter upon, and less than 5% complete, a high school course. This means that there is large scope for vocational training among teen age boys and girls as well as among adult workers.

The Vocational Board believes that this training must, for the most part, be made available locally so that the young people may not have to leave their homes to procure it. Establishment of full-time day courses for adolescents up to the age of 16, followed by part-time co-operative classes from 16 to 18, is encouraged. This scheme supplies the pupil with a broad basis of general knowledge and an opportunity to make wise choice among the occupations. The part-time classes organized in co-operation with the employers, providing alternate periods for work and study, ensure a vital connection between industry and the school and make the latter truly practical.

Such a service requires either separate vocational schools or special departments added to existing high schools. Each school or department offers training definitely related to the work of the community that supports it, and a generous share of the courses is devoted to citizenship subjects such as history, civics, economics, health, etc.

Illustration of Policy

A few examples will illustrate how this policy is actually working out:

Carleton County is a community in which agriculture predominates. The towns are all small and it would be difficult for any of them to support a vocational school alone. Such a school was therefore established for the whole county and is open to all the people between 14 and 25 years of age. Commercial home economics and agricultural courses are offered. The school has forging, motor mechanics and woodworking shops. Students give much time to mechanics, carpentry, farm power, etc. It is hoped that the other counties may soon establish similar institutions, and thus extend vocational training opportunities generally throughout the rural sections.

During 1921 Fredericton made a survey to discover its vocational education needs. This was the first survey of the kind to be made east of Ontario. It revealed a basis for day classes in home economics, commercial and general industrial subjects. The industries, with the exception of leather and lumber, were found to be small and varied and it was suggested they would best be served by day instruction of a general nature and by evening schools. No basis for a unit trade school was shown to exist.

In Fredericton almost as many people were found to be employed in commercial pursuits as in all the industrial jobs combined. A vocational commercial department was therefore established in the High School. The school board is now considering the erection of a new building to house all secondary grade educational work for the city—including the industrial and home economics courses recommended by the survey committee.

The commercial course now in operation is of three years' duration. Approximately half the time is devoted to technical subjects and the balance to English, French, history, health and other general education branches. A high standard is being set which will doubtless be followed by many other towns of the province in the near future.

An Educational Survey

Edmundston also made an educational survey in 1921, and already a fine composite high school is under construction. Railroading and the lumber and pulp business constitute the leading industries here. An entire wing of the new school will be devoted to vocational education,

providing machine shops for both iron and wood working, chemical, physical, and home economics laboratories, commercial and other class-rooms. Every facility is being provided to train pulp-mill workers. It is felt that there is a big future for this business and for paper making in New Brunswick, and no effort will be spared by the Vocational Board to train workers to assist in their development. Edmundston's example will doubtless encourage Bathurst, St. George, and other pulp-mill towns to offer their workers the advantage of scientific training.

The above illustrations show the lines along which New Brunswick is moving. At the start much of the work is of necessity elementary or pre-vocational, but more advanced industrial training is also being developed.

Milltown, Marysville, Newcastle and other towns are taking active steps to provide vocational education facilities of appropriate kind.

St. John and Moncton, the largest centres in New Brunswick, have not yet availed themselves of the benefits of the Vocational Act to any great extent. The matter is under advisement in these places, however, and the outlook is that vocational training opportunities of some type will be fairly well distributed over the province within the next few years. When this is done and when the compulsory school age is raised to 16 years, we shall have a fair chance to train each boy and girl for citizenship and efficiency in some job.

In addition to providing for high school age boys and girls, vocational evening classes for adult workers are in operation in about a score of localities in the province. The programmes vary according to the industrial needs of the communities, and the subjects taught include the following: dressmaking, plain sewing, millinery, domestic science, preparatory commercial arithmetic, applied mathematics, bookkeeping, stenography, typewriting, blue print reading, elementary mechanical drawing, architectural drawing, lettering, show-card writing, industrial stitching, estimating, industrial chemistry, lumber surveying, motor mechanics and electricity.

A School for Fishermen

Fishing forms the basis of an important industry in New Brunswick, and one which is doubtless capable of considerable development through the application of skill and science. Gas engines have transformed the fisherman's job in the last few years. Short courses in the principles, care and repair of these were given during the past year in forty communities by an itinerant instructor who went from place to place carrying his teaching kit with him.

The garage business is a large and growing one requiring special knowledge and skill. A course in battery and ignition work for garage mechanics was carried on by the Provincial Vocational Board at Fredericton during the past winter, as a beginning in this field. Further courses will be provided.

The matters of developing an instruction by correspondence service and a technical institute for the province are being considered by the Vocational Education Board. A technical institute offering courses in such subjects as: steam engineering, motor mechanics, welding, electricity, surveying, navigation, accountancy, design, materials, etc., etc., would be of much service to the industry of the province. It would also greatly help in the problem of training competent vocational teachers. The lack of such teachers is now the greatest hindrance to the development of vocational education. In this connection the Vocational Board holds an annual summer school for the professional training of selected teachers and trades people. The board also pays travel and tuition expenses of approved individuals who desire to take courses of one year abroad to prepare for teaching in New Brunswick, but a more vigorous teacher training policy is required.

Financial aid by the Province of New Brunswick for vocational education is given the communities.

Further Oil Development

Further interest and significance in the search for oil in Alberta, which is in active prosecution from the international boundary to within the Arctic circle, a distance of over a thousand miles, is attached to the proposed large oil refinery in the city of Calgary. The new establishment is fraught with considerable importance not only to the Alberta city, but to the entire West and to the oil situation in Canada as a whole. It is further evidence, if any were needed, of the Imperial Oil Company's persistent faith in the existence of commercial oil in Alberta and its determination to prosecute its operations until a successful conclusion is reached.

The new refinery is to cost approximately \$2,500,000, and will be the largest project to locate in Calgary since the Ogden Shops of the Canadian Pacific Railway. A commencement will be made either this fall or next spring. The construction work upon the plant alone will employ from 300 to 500 men from six to eight months. The completed refinery will employ from 200 to 250 skilled men. The payroll of the city of Calgary will receive an addition to the extent of about \$50,000 a month, and taxes will jump on the property several fold. The output of the plant is expected to be from 2,500 to 3,500 barrels of gasoline per day, resulting in the centralization of the gasoline distribution business of the Province of Alberta in the southern city.

Drilling at Ten Different Points

The new plant, it is announced, will at first secure its crude oil from the United States, that is, from the well recently brought in in the Sweetgrass country across the Montana border. There is every reason to suppose, however, that a development of such proportion is made with an eye to the future and the confident expectation of success attending the drilling activities at one or more of wells which are being drilled at the present time in many parts of the province by the Imperial Oil Company.

The Imperial Oil Company is at present prosecuting drilling operations at ten different points in Alberta, ranging from a few miles north of the international boundary to the Fort Norman district within the Arctic circle. The following is the depth of drilling at the various wells on August 18th: Boundary 3860 feet; Monitor or Misty Hill 2907 feet; Fabyan or Grattan 2188 feet; Willow Creek 2705 feet; Pouce Coupe 2380 feet; Coalspur 1110 feet; Turner Valley or Black Diamond 2704 feet. There are three wells in the Fort Norman district which at the latest reports received had attained the following depth: Mackenzie River South Shore 1704 feet; Bear Island 485 feet; Blue Fish 495 feet. These are in addition to the first well at Fort Norman where oil was struck and which is at the present time being produced at an average of from 60 to 70 barrels per day, and the original depth of

which has been increased to 991 feet.

The new oil refinery at Calgary comes in addition to thirteen similar plants operating in Canada, to which again must be added six proposed further plants. Of those already in operation two are in British Columbia, three in Alberta, one in Saskatchewan, one in Manitoba, four in Ontario and one each in Quebec and Nova Scotia. Crude petroleum is being brought into Canada from three or four foreign countries. For British Columbia it is brought from Peru; for the Prairie Provinces from Texas, Kentucky, and Wyoming. The United States fields also supply the Ontario and Quebec refineries, whilst the latter province also gets part of its crude oil from Mexico. The Nova Scotia refinery draws from Mexico, this plant having been built to supply the navy during the war.

Peat Production in Ontario

In view of the chaotic state of the coal mining industry in the United States, Eastern Canada will undoubtedly experience a dearth of coal fuel during the coming winter, and the problem of alleviating the situation has turned attention to the more general use of peat, of which there are large bogs located in Ontario. The lack of known coal resources in that province has made the problem one of paramount importance, and even though the coal mines of the United States get back into their normal stride in a short time, it is unlikely that the coal needs of Ontario will be fully supplied. Development work on the Alfred bog, Prescott county, was carried on in a more or less desultory manner by interested parties prior to 1918, when it was taken over by the provincial and Federal governments, under the supervision of a Peat Committee, for experimental purposes.

A survey of the peat situation in Canada shows that there are about 37,000 square miles of bogs in the Dominion, and to date 105 have been surveyed with an aggregate area of approximately 224,131 acres. These contain 190,330,170 tons of fuel and 20,588,110 tons of litter. Forty-six of these bogs, which have been surveyed, are in the Province of Ontario, with a total area of 132,321 acres, containing in the neighborhood of 110,109,000 short tons of peat fuel and 518,000 tons of peat litter. During the past year four bogs were surveyed in the province, a total of 11,089 acres being investigated. Three of the bogs are situated near the cities of Fort William and Port Arthur, and the fourth near Verona. All these areas were found to contain peat suitable for coal.

Heat Value Compared with Coal

The excessive moisture of peat in its natural form is one of the greatest drawbacks of successful production. From 82 to 92 per cent of peat as it is found in nature is moisture, and this must be reduced to 25 to 30 per cent before it can be used as an efficient fuel. In that form it is known as Standard fuel, and has a heating value compared with anthracite of $1\frac{1}{2}$ tons to 1 ton respectively. The big advantage of peat over coal is the complete absence of ash, which in coal amounts to between 10 and 25 per cent. At the present time peat is advocated for cooking purposes, and in the furnaces during the fall and spring months.

Much money has been expended on experiments and improvements at Alfred, and production now ranges around eight tons an hour, although plans are under consideration for increasing this rate to ten tons, the only handicap being a lack of power. Investigations and experiments carried on there during the past year or so are now complete, and operations on a commercial scale

have commenced. Production extends over a period of 50 to 60 days, or from the first of May to August the thirty-first.

Output Requisitioned by Coal Dealers

Lately there has been active demand for this fuel, orders coming in from widely separated points in Ontario, shipments being made to some twenty odd towns. One or two trial shipments have been made to Montreal, but it is doubtful if a permanent market will be found there. According to the Hon. Harry Mills, Minister of Mines for Ontario, the entire output of the Alfred bog has been requisitioned by coal dealers as a substitute for coal. The gross tonnage will amount to approximately 5,000 tons, and will retail to the consumer in Ottawa at \$10.60 a ton, and at Peterboro \$14 a ton.

Canada annually expends huge sums on the importation of coal from the United States, and will continue to do so until, by the further development of her own vast coal and coal substitute resources, the Dominion will be independent of outside sources for her fuel supplies. The development of the peat bogs at Alfred is a step in the right direction, and when the success which is being made of this venture by the Government becomes known, it is safe to assume that private capital will become interested in exploiting other bogs.

Canadian Silver Production

Canada has in 1922 been experiencing a most active mining year, and there is no longer any doubt but that production figures at the end of the twelve months will show substantially increased production in practically all minerals. Particularly gratifying, in view of the decline of recent years, is silver, which, indications are, will record a considerable increment over the Canadian output for some time. Improved conditions in silver mining, higher prices for silver and the lower costs of labor and supplies have presented an opportunity for the profitable mining of this mineral which has not existed for some time.

This activity in silver mining is fairly general in the Dominion in those areas where silver is found. The silver production of the Ontario mines has to date been very substantially in excess of 1921 and years back for some time. British Columbia's silver output in 1922 will be the highest on record, according to accomplishment thus far. Recent developments augur the status of a big industry for the Yukon in silver mining, and the area has in this respect received a new lease of life. Notable discoveries were made in 1921 and several hundred claims staked. This summer there is much silver mining activity in the Keno Hill district.

Since the Dominion commenced keeping production records in 1862, Canada has produced \$265,292,685 worth of silver, to which total the Cobalt camp in Ontario has contributed more than \$200,000,000. Canadian silver production in 1921 amounted to 13,330,357 fine ounces, worth \$15,100,685, of which 9,877,465 ounces are attributable to the Cobalt area. Other producers in 1921 were—Quebec with 57,737 ounces; British Columbia with 2,806,079 ounces; the Yukon with 393,617 ounces; and Manitoba with 28 ounces. The pinnacle of Canadian silver pro-

duction was reached in 1910, when 32,869,264 ounces valued at \$17,355,272 were produced, and the output of 1921 was a minimum since the time when the Cobalt area became a factor in production.

British Columbia a Strong Factor

Previous to the discovery of silver in the Cobalt area in 1903, the Province of British Columbia was the first factor in the Dominion's annual production of this mineral, the output of this province reaching an aggregate of 5,151,333 ounces, valued at \$3,036,711, in 1901. The Yukon at the beginning of the century was an important producer with 195,000 ounces worth \$114,953, in the same year. Ontario at that time was producing 151,400 ounces and Quebec 41,459 ounces.

The building of the Temiskaming and Northern Ontario Railway into Northern Ontario uncovered rich silver deposits in 1903, and straightaway the new area began to develop into Canada's first silver area and the richest producing silver camp in the world. Production from the region about Cobalt commenced in 1904, bringing the province's production of silver for that year up to 206,875 ounces from 17,777 ounces the previous year. Production in the following year amounted to 2,451,356, and thereafter practically doubled each succeeding year, reaching its aggregate in 1911 with 30,540,754 ounces. Since that time there has been a gradual dwindling down to the minimum of 9,877,465 ounces in 1921. Nevertheless the Cobalt area continues to produce one ton of silver bullion every 24 hours. For more than fifteen years not a twenty-four-hour period has gone by but the mines have produced at least a ton of silver, and three tons per day was common in the banner days of the camp.

Production Outlook Excellent

The Province of British Columbia has been a fairly steady silver producer since the beginning of the century, fluctuations being very slight over the two decades which have elapsed since that time. In 1901 this province accounted for 5,151,333 ounces; in 1905 for 3,439,417 ounces; in 1910 for 2,407,887 ounces; in 1915 for 3,565,852 ounces, and in 1920 for 3,158,707 ounces. The decline in 1921 is expected to be well made up by the great activity prevailing in British Columbia silver camps this year.

At the same time Quebec has been making a fairly consistent rise in production, coming from 41,459 ounces in the beginning of the century to 60,874 ounces in 1920, and exhibiting but a slight decline in the depression of 1921. The Yukon Territory, on the contrary, up to the time of the new discoveries and consequent development, has steadily declined, and from 195,000 ounces in 1901 dropped to an output of 16,164 ounces in 1921. Shipments emanating from new

discoveries in 1921 gave it a record production of the surprising total of 393,617 ounces, surpassing its previous best year, when 360,101 ounces were smelted.

Conditions in Canadian silver mining have been dull over recent years, but a remarkable revolution has taken place, and future prospects are bright indeed. New discoveries over a wide area have proved the continued existence of the mineral in Canada, and better prices and working conditions have initiated much development with profitable expectations. There is every reason to believe that the enhanced production figures in sight at the end of 1922 form only a single step in many gradients ascending to a new record.

Developing Saskatchewan Clays

Ceramic experts predict that the Province of Saskatchewan will become the leading clay-producing area of the Dominion because it has a greater variety of clays than any other province of Canada, and that with development Saskatchewan should, in the manufacture of pottery and clay products, attain first importance. These clays range all the way from the lower grades used in the manufacture of bricks and tiles to a kaolin which burns as white as, if not whiter than, the best British product. As soon as financial conditions warrant it, the provincial authorities are bent on taking steps for the development of these deposits, which will give Saskatchewan its rightful place in ceramic manufacture.

For some time it has been known that Saskatchewan possesses clays which give it a peculiarly distinctive place in Canadian industrial life. To promote a knowledge of these deposits and encourage their development a course of ceramics was included some time ago in the curriculum of Saskatchewan University and a ceramic engineer secured who had a wide experience not only in tuition but also in field work among clays and in designing and constructing plants for the manufacture of brick, tile and other clay products. This accomplished a definite step forward in rendering available for commercial enterprise some of the valuable and extensive clay deposits of the province.

A Great Variety of Clay

The classes of clay found in Saskatchewan are fireclay, brick and tile clays and earthenware clay. The first occurs at Eastend, Readlyn, Willows and Claybank; the second at Bruno, Estevan, Arcola, Weyburn, Pilot Butte, Claybank, Shand, Broadview and Eastend; the third at Readlyn, Willows and Eastend. Fireclays are used generally and extensively on industrial furnaces, blast furnaces, basic open hearths, furnace linings, above slag line for flues, boiler settings, linings of stoves, household grates, etc.

Earthenware clays are used in the manufacture of building brick, paving brick, sewer pipe, drain tile, building tile, chimney lining, chimney tops, etc. Earthenware clays are used in the manufacture of pottery such as crocks, jars, churns, porcelain ware, blocks for flooring, architectural terra cotta, etc.

Extensive work undertaken has definitely proved Saskatchewan clays to be the equal of deposits anywhere, justifying greater development and the establishment of pottery industries in the province. Exhaustive tests have been made with Eastend clay in the ceramic laboratories, New York, in making chinaware, porcelain, terra cotta, etc., and all were highly satisfactory. No plant for these wares has yet been established in Saskatchewan, and all chinaware and pottery of every description have to be imported. A total of 170 carloads of clay were shipped from Eastend to Medicine Hat, Alberta, in the past year, to be manufactured there into brick, tiles and pottery.

Will One Day be Great Industry

It is self-evident that opportunities exist in the Province of Saskatchewan for entering upon the exploitation and commercial development of these valuable clay deposits, which are, for the main part, accessible to good transportation facilities and other industrial requirements. Canada's imports of clay and clay products in the fiscal year 1921 amounted in value to \$10,781,592 and in 1922 to \$6,778,365, whilst the Dominion's exports of these products were of the insignificant amount of \$323,989 in the former year and \$257,624 in the latter. In 1920 Western Canada alone used more than \$28,000,000 worth of clay products in addition to its share of \$4,000,000 of crockery imported into Canada. In the Province of Saskatchewan, brick and tile buildings in excess of \$8,000,000 in value are erected each year, the material for which has to be imported, over the value of approximately \$300,000, which is the extent to which this province, with such valuable deposits, contributes in manufacture.

The present centres of the clay manufacturing industry in Canada are S.W. Ontario, St. John, New Brunswick, St. Johns, Quebec, Vancouver, B.C., and Medicine Hat, Alberta, the latter point depending entirely upon Saskatchewan deposits for its raw material. These five points are responsible for practically the entire Canadian output of clay products. The Medicine Hat industry, drawing its clay from Saskatchewan, has made such aggressive progress that it is now accounting for seventy-five per cent of the Dominion output and going a long way towards supplying the prairies with certain clay products.

Saskatchewan, which contains very favorable locations for the establishment of clay manufacturing plants, has as yet no clay industries. But

he province is keenly alive to the situation and the opportunities that are waiting, and in its accurate survey of its many and various clay deposits, its exhaustive tests to determine the suitable qualities of all material, and through its university course preparing a future supply of trained ceramic experts, it is paving the way for the development of the clay industry on a scale the Dominion has not hitherto known and one which its valuable resources warrant and justify.

Tree-Planting Activity

The Canadian prairies, from the exceeding volume no less than the high quality of their agricultural product, have achieved such world renown that the question of the fertility of the soil, climate and other factors entering into profitable farming are beyond questionable possession. There are sometimes contemplating settlers, however, who, whilst realizing the peculiar advantages farming on prairie land has from certain points of view, entertain definite objections to living upon vast, sweeping, unbroken plains, horizon-bound, treeless, devoid of shade or shelter. These objections would be justified did the Canadian prairies present such a bare, unattractive aspect, but such is no longer the case.

When the great trek to the Canadian West was first well under way, the Canadian government proved to its own entire satisfaction that, for whatever reason few trees were found to be naturally growing on the prairie lands, it was not to be accounted for by the inability of these lands to produce and support substantial forest growth. Being satisfied to this extent, in the interest of better and more economic farming, in the fostering of more attractive living conditions, and the promotion of a spirit of content and an appreciation of the beautiful in the farming population, it inaugurated a campaign of tree-planting, at no expense to the farmer, save his initial labor in planting and subsequent care.

The establishment of a 480-acre nursery by the government at Indian Head was closely followed by a similar establishment by the Canadian Pacific Railway at Wolseley in the same province, which organization also undertook extensive distribution. About five thousand farmers per year, in the three provinces, who have made application, have been satisfied. The principal varieties of trees sent out have been Russian poplar, willow and carragana, species to which the prairie soil and climate are especially adapted. In the past twenty-one years, the Canadian government has distributed 60,418,000 seedlings and cuttings, or about 3,000,000 annually.

Forty Thousand Shelter Belts

In the time which has elapsed since the initial work was done, the Canadian prairies

have undergone a gradual transformation. Beautiful green groves of thriving trees surround many prairie farm homes, imparting shade in summer, giving shelter in winter to farm stock, having an ameliorating influence upon the living conditions within the homes, and furnishing additional touches of beauty to the landscape. Their economic value must not be underestimated. It is figured that the government's work has resulted in the establishment of 40,000 shelter belts on the prairies which are valued by their farm owners at from \$500 to \$5,000 each, with an average value of about \$1,000.

The tree-planting movement has received increased impetus and momentum each year since establishment with the wider advertised possibilities of growing belts, as well as the realization of their great agricultural value, and the enthusiasm and activity which have characterized the spring and summer of the present year have resulted in more trees being planted in 1922 than in any previous year. About six million trees have been sent out from the Dominion Government nursery at Indian Head alone, whilst the forest nursery at Petawawa, Ontario, has been responsible for planting 150,000 trees on the forest reserves of the Prairie Provinces.

It is gratifying this year to note that the exceptional interest manifested in tree planting is generally over the Dominion, and that the prairie planting is but a small part of the main movement. The Quebec and Ontario government nurseries have done a great deal more forest planting this year than ever before. Several of the big pulp and lumber companies have done considerable planting, and there has been activity evinced by the municipalities of Quebec and Ontario in forest plantations. In the latter province the scheme of county and township forests devised last year has been put into active operation.

In the Eastern provinces as well as on the prairies, cities, towns and villages have planted trees by the thousands along the streets and in the parks, and where provincial highways are being constructed trees have been set out under a systemized plan. Many urban centres and municipalities have decided upon avenues of trees as most appropriate and permanent war memorials, an important one of which is the planting along the proposed boulevard which is to traverse Montreal Island from end to end. It is significant of many things that the cities and towns of the prairies are now, from the beauty of their arborage, their well-set-out parks and shady avenues, almost indistinguishable from the older cities and towns of the East, where trees are indigenous and where growth has been promoted for a number of years. Canada certainly has a keen appreciation of the value of tree growth, both from the aspects of economy and beauty, and is fostering the planting of trees in every way.

Motion Picture Films

A print of each of the following films issued by this department is deposited with the representatives listed below. These are available upon application for use by schools, theatres, clubs, societies, boards of trade, and other associations and organizations.

Homemaking by Irrigation.—Irrigation farming in Southern Alberta, the various operations and their results.

The Land of Promise.—Featuring the well-known agricultural section of Battleford, Saskatchewan.

Opportunity.—Illustrative of Western Canadian opportunity, more specifically in the district of Lloydminster, Alta.

Livestock and Dairying.—The fine status and remarkable progress of this industry in Western Canada picturized.

Taming the Last West.—Depicting the evolution of the Canadian West from buffalo range to a modern agricultural area.

The Sunny Side of Rural Life.—The farmer on holiday, showing that life in Western Canada is not all work.

The Evolution of a Grain of Wheat.—The life of wheat seed from the time it is sown until its progeny enters into the composition of a loaf of bread.

Apple Growing in Evangeline's Land.—Orchard cult in the region Longfellow's poem made famous.

The Apple Harvest of the Okanagan.—Gathering and shipping apples in the beautiful British Columbia valley.

Curing Fish in Nova Scotia.—Depicting the various phases of curing and smoking fish in the Maritimes.

The Canadian Sardine.—The sardine caught, canned and distributed.

Some Water Powers of Eastern Canada.—The beautiful and powerful waterpowers of the Eastern Canadian provinces.

The Silver Fox Industry of Canada.—The domestic ranching of silver foxes in Prince Edward Island.

New Homes Within the Empire.—The camera follows the progress of a British immigrant from the first awakened interest in Canada till when he settles on a Western farm.

Trail—the Metallurgical Mecca of Canada.—Work at the Sullivan Mine and the operations of the plant of the Consolidated Mining and Smelting Company at Trail, British Columbia.

Departmental Publications

Any of the following publications will be sent free on request:

The Prairie Provinces of Canada.—A descriptive statistical booklet on the provinces of Alberta, Saskatchewan and Manitoba, with full information on the opportunities for farming in the West.

Business and Industrial Opportunities in Western Canada.—Full listings of industries existing and business openings in the provinces of Western Ontario, Manitoba, Saskatchewan, Alberta and British Columbia.

Why Canada.—Reliable and comprehensive information for the United States manufacturer, showing the advantages of establishing his industry in Canada.

Canada's System of Government.—Canadian government briefly outlined to portray its democratic traits.

The Story of Canadian Nickel.—History of the nickel mining industry.

Canadian Oil Exploitation and Prospects.—An expert engineer's history of Canadian oil development and future possibilities.

Canadian Water Power Development.—Authoritative and exhaustive survey of water power reserves and possible development.

Irrigation in Western Canada.—A comprehensive survey of irrigation in the West from the initiation of the first project to the extensive developments of the present day.

Education in Canada.—The wide scope of Canadian education depicted to show that a settler need have no apprehension in this regard.

A Canadian Grain Handling Plant.—How Canadian grain is stored and shipped. Authoritative article on Canadian elevators.

Value of a Settler to Canadian Railroads.—Computation from reliable statistics of a farming settler's revenue-producing worth to Canadian railroads.

Bituminous Sands of the Athabasca Region.—Description with known values, and possibilities of development of the widely known tar sands of Northern Alberta.

Water Powers of the Maritimes.—Authoritative article on the undeveloped power systems of the Eastern provinces.

Water Powers of Manitoba.—The water powers of this province dealt with exhaustively.

Oleomargarine.—History of oleomargarine in Canada and its future prospects.

Synopses of Natural Resources.—Pamphlets dealing briefly but concisely with Kaolin or China Clay, Oil Shales, Mica, Fluor-spar, Asbestos, Molybdenum, Magnesite, Fruit, Flax Fibre, Nickel, Coal, Clays, Salt, Copper, Zinc, Silver, Gold, Pyrites, Iron, Potash, Talc, Feldspar, Platinum, Phosphate (apatite) Manganese, Graphite, Cement, Barytes, Gypsum, Petroleum and Natural Gas, Corundum, Sulphates of Sodium and Magnesium, Fur, Fish, Peat, Mineral Waters, Building and Ornamental Stone, Flour Milling and Water Powers.

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Charles A. Dunning

Premier of Saskatchewan, began his Canadian Career on a Homestead

PREMIER DUNNING of Saskatchewan came to Canada from Leicestershire in 1902. He was only seventeen years of age and sickly and thought it would be well to try another clime. He decided on Canada because, as he said, "he wanted to be where there was wood and water," and Canada has plenty of both.

When he landed in Canada his bankroll was close to an overdraft and his assets nil—with the exception of a heart beating with a strong determination to succeed and courage overplus. He found that the streets were not paved with gold, as he had been told, or even silver or copper. But he got a job.

At Yorkton, some 25 miles beyond the railway head, he sold his services to a farmer—and gave good value for small wage. When he knew the game a bit, he took up a homestead in North-East Saskatchewan. There he made a success, and through a short speech at a farmers' convention his marked ability brought him into the limelight. He became a director of the Saskatchewan Co-operative Elevator Company, then its secretary and finally its general manager. From then onward—much sought after in the political world—he became Premier in the spring of 1922.

To leave his home in England at seventeen—a poor boy in humble circumstances—and come to a new country with no definite idea of where he would locate, and at thirty-six to become Premier of one of Canada's most important provinces, is a rapid rise. There was no luck about it; it was hard work backed by grit and study and ambition. He demonstrated his fitness for the work in hand.

The career of Premier Dunning is the best possible proof that any young man may, with good reason, hope to do well in Canada. It presents him with opportunities which, if he is wise, he may, like C. A. Dunning, turn to his own advantage.



Department of Colonization and Development

Canadian Pacific Railway

J. S. Dennis, - Chief Commissioner.





Agricultural and Industrial Progress in Canada

A monthly review of Agricultural and Industrial progress in Canada, published by the Department of Colonization and Development of the Canadian Pacific Railway at Montreal, Canada.

VOL. 4—No. 11

MONTREAL

November, 1922

Canada's Economic Students

CANADA is flooded annually with a stream of American visitors. Scores of both sexes come up across the border during the months of summer and fall to holiday in the Dominion, to browse on the wild scenery of Canada, to recreate in the expansive and primitive national parks. Scores of others are attracted by the plenitude of game and the excellency of the hunting the country furnishes. All summer and fall these transients have been in evidence in every section of the country, on the railways and the motor roads, and for the finer months of the year constituted such a volume, considered comparatively, as to leave the distinct imprint of their national characteristics upon the country.

But the journeyer on Canadian railways will encounter at all times of the year still another kind of visitor, a type less numerous and less obtrusive, a quiet, modest, unassuming man, saying little. He asks intelligently, leading questions, and obviously thinks a great deal. He has the aspect of one genuinely seeking information, and his impressions are deeper than scenery and beauty impart. He wants to know many things about the country and is not infrequently prone to make Canadians ashamed of their ignorance of their native land. He is the American business man stealing a well-earned rest and respite from his neighbors, yet bent on making his leisure profitable and educating himself further. Knowing his own country, he desires to study that of his nearest neighbors at first hand.

It is not only distinctly illuminating and entertaining for a Canadian to get into conversation with such an individual, but a positive

tonic to one who, in his own personal trials and tribulations, has lost a wholehearted confidence in his Dominion. The traveller has the benefit of a comparative outlook. He hails from a country which has had the same troubles and passed through exactly the same stages of development. With his keen business acumen he can readily compare, gauge the economic position of the country, and fairly accurately determine immediate prospects.

This class of men is not naturally effusive nor subject to undue enthusiasm, but a few minutes' converse with such a traveller, making his first trip to Canada, will disclose the fact that he is absolutely surprised and astounded with all he is seeing and learning. Invariably he will voice a wonder at the wealth and extent of the country's natural resources and at the stage of development the country has already attained. A single train journey across Canada has educated him to the real status of the Dominion and the place it deservedly occupies among the countries of the uni-

With United States funds at a slight discount in some communities in Canada, the surprising improvement in Canada's financial position that has taken place during the past twenty-two months is indicated. In December, 1920, the premium on N.Y. funds in Canada was 19.2%. No country that was a belligerent during the Great War can show a better record than this. If anything is needed to demonstrate the soundness of Canada's position, it is surely to be found in the foregoing.

verse. After all, in matters of economics, pen pictures are a weak method of portrayal, and statistics, though enlightening, have not the force of appeal of actual visioning.

Such interest in Canada is quite comprehensible, for the Dominion is becoming to an increasing extent, a depository for surplus American money. Many of these men have investments in Canada or are contemplating making them there. It is natural that they should wish to assure themselves of the safety of such moneys or determine the wisdom of carrying out their intents. In the proximity of the two countries, the American business man has a distinct advantage over the British, and this is the reason why they have been subjected

Agricultural & Industrial Progress in Canada

Published Monthly. Free on request.

It will be appreciated by the Department if editors and writers using matter from this Bulletin will quote source.

Norman S. Rankin, *Editor of Publications.*
E. L. Chicanot, *Asst. Editor.*

to a minimum of loss. It is an easy matter for them to first scout out the ground and later to exercise a close supervision.

Canada, in her enormous natural wealth and the sane manner in which she is setting about expansion in her natural life, is her own best appeal to investors of all kinds. Observers cannot but be forced to a realization of her greatness and the surety of her future from merely the evidence both sides of a railway track disclose. Men who never contemplated investing in Canada have done so after making their first trip to Canada. Investors after seeing the country have doubled their investments. In innumerable cases a single visit has been one of the most profitable undertakings of their lives and reacted to the benefit of the Dominion.

More American business men should visit Canada. Organized visits of this nature have effected greater mutual benefit than perhaps any other business factor. The utter wonder which individuals express on observing Canadian development for the first time, is indicative of the lack of realization in general of what Canada is doing. In the future more and more American capital, a greater number of American industries, is bound, for economic reasons, to come up to Canada, and the American business man should make it a point to know Canada and what she is doing at first hand. He should adopt the slogan "See America First" in its literal and proper significance, for it includes the Canadian Dominion.

The Crop Situation

By J. Dougall and T. S. Acheson, *General Agricultural Agents, C.P.R., Eastern and Western Lines*

Agricultural conditions in Canada during the month of October have been generally perfect. Threshing has been carried on under excellent conditions and the Western wheat crop, as regards both quality and quantity, is all that could be desired. The market has been somewhat erratic and prices lower than farmers anticipated, but with regard to grains they may be said to be satisfactory under the circumstances. Root crops have been generally good throughout the country, but the potato crops of New Brunswick and Nova Scotia fell considerably below estimates made earlier in the year. Market conditions are anything but satisfactory for this crop.

Fall work is well advanced and the acreage ploughed in the West is normal. Owing to fine weather and lack of rain, however, little fall ploughing has been done in Eastern Ontario and Quebec. In Western Ontario and the Maritimes fall work is at a normal stage.

British Columbia.—As anticipated, the yield of apples in this province is less than 1921, being 2,538,000 boxes. The quality is good, but shippers are having some difficulty in finding a market at reasonable prices, and unless some change occurs growers will have to be satisfied with a small return.

Alberta.—Weather has been clear and cool with frost in some northern sections. Threshing is completed and some fifty per cent of fall ploughing done. Fall ploughing is well under way in the Peace River country, and it is anticipated that a greater acreage than last year will be prepared.

Saskatchewan.—Threshing is completed and farmers well satisfied with the results. Livestock and feed situation is entirely satisfactory. Fall ploughing under way and some sixty per cent completed.

Manitoba.—Weather has been fair and moderately warm, which permitted the continuance of threshing, which is now completed. Yields generally have proven up to expectations and in the majority of cases considerably better. Livestock will go into winter quarters in good shape with ample supplies of feed. Potatoes have been a good crop, though market not the best. Fall ploughing has been more than fifty per cent completed.

Ontario.—Good progress has been made in Western and Northern Ontario with fall work, and all harvesting is completed. There has been some damage to corn from corn borer and the government is exercising a rigorous quarantine. The Niagara peninsula has produced probably the largest crop in its history as applied to soft fruits. As usual, under these circumstances, prices have been low, but owing to the operation of the district's co-operative marketing organization very little waste occurred although some of the lower grades brought small prices. The apple situation is quite satisfactory, although the commercial estimate is 90 per cent of 1921, or 796,500 barrels. The potato crop of this province is estimated at 18,485,000 bushels, considerably in excess of 1921.

Quebec.—Harvesting conditions have been excellent, but owing to the lack of rainfall very little fall work has been done in this province. Light showers have fallen during the latter part of October, but the percentage of fall work is behind last year. The commercial apple crop is estimated at 61,600 barrels, clean.

Maritime Provinces.—Generally speaking conditions are satisfactory, although the potato yields fell much below estimates made earlier in the season. The effect of the United States tariff is being experienced in an unsatisfactory market. The apple crop of New Brunswick is estimated at 41,250 barrels and that of Nova Scotia at 1,629,000 barrels. The potato crop of New Brunswick is placed at 9,715,000 bushels, Nova Scotia at 7,055,000 bushels, and Prince Edward Island 4,474,000 bushels.

An Achievement for Canada in France

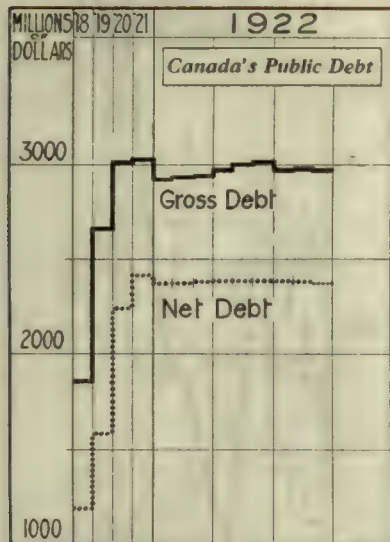
In many directions it is difficult to drive home the fact that Canadian wheat possesses unique qualities which make it peculiarly desirable from many standpoints and create for it a demand from all sections of the globe. Critics of Canada's climate are slow to be convinced that it is largely this very element which is responsible for the high quality of the Canadian product and that for the same reason its standard is impossible of reproduction in other countries. The profound scepticism which declared that wheat could never be commercially raised north of the international boundary is



Investors' Index of Canadian Conditions

NOVEMBER, 1922

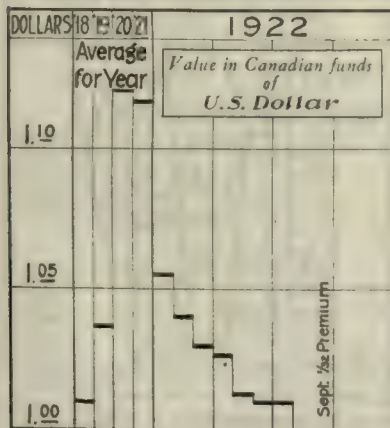
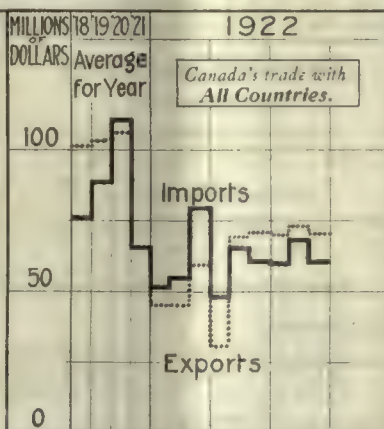
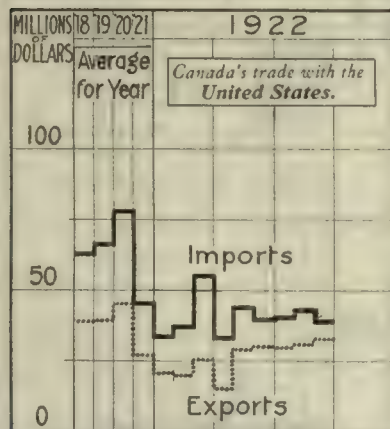
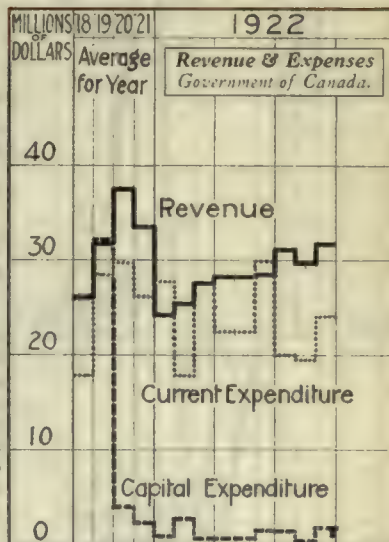
A permanent group of Charts on Key Statistics brought up to date and issued monthly by the Department of Colonization and Development, Canadian Pacific Railway, Montreal.



Government's Position (September)

Gross National Debt	...	\$2,967,982,080
"Assets"	...	583,951,237
Net National Debt	...	2,384,030,843
Revenue for Sept.	...	31,831,446
Expenditure—		
Current Account	...	24,152,161
Capital Account	...	1,782,522

It will be noticed that there was a slight increase in the Government expenditure on both current and capital accounts. These increases more than equal the increase in revenue during the month. Both are accounted for, however, by increased seasonal adjustments of the various departments at Ottawa. They do not represent any real departure from the policy of economy.



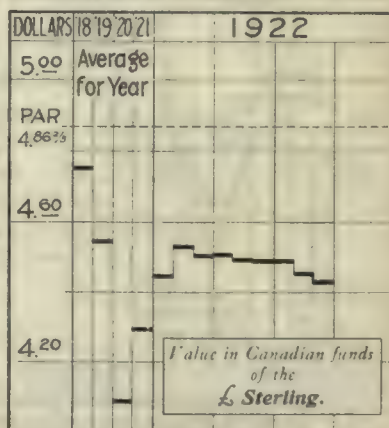
Canada's Foreign Trade (September)

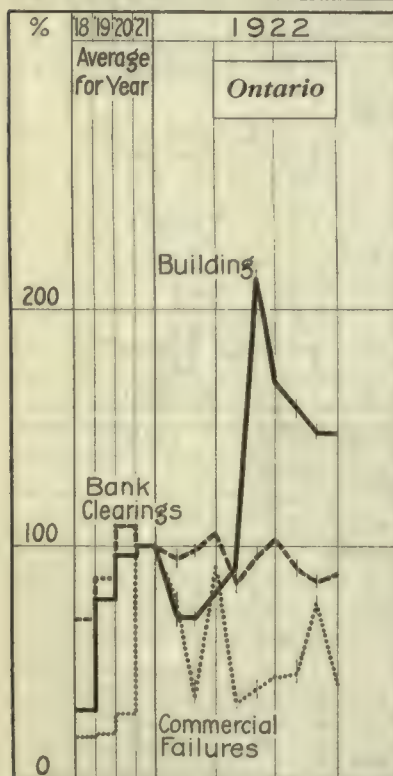
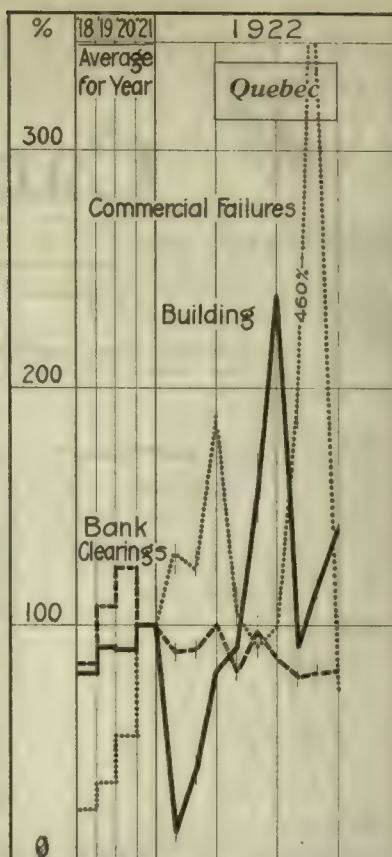
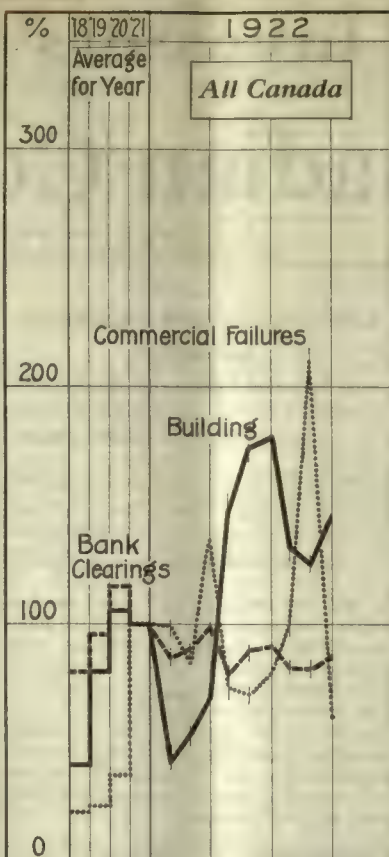
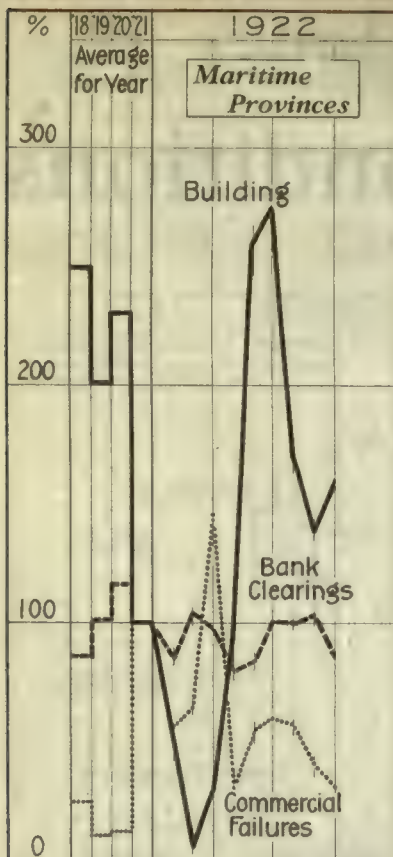
Total Imports	...	\$60,318,410
Total Exports	...	71,592,628
U.S.: Imports from	...	38,622,801
Exports to	...	32,809,366
Gt. Britain: Imports from	...	12,513,830
Exports to	...	25,497,800

Average value in Canadian funds of £ Sterling \$4.43 1/2; U.S. Dollar \$1.00 1/2.

Imports—Imports for Consumption in Canada.
Exports—Exports of Canadian produce only.

Exchange figures are monthly averages supplied by the Bank of Montreal





District Conditions

As indicated by

Building (Solid Lines)

(Maclean Building Reports, Limited)

Commercial Failures

(Dotted Lines)

(Messrs. R. G. Dun & Co.)

Bank Clearings (Dash Line)

All Canada:

Bank Clearings	\$1,261,000,000
Building Const.	29,313,500
Com. Failures	3,462,559

Maritime Provinces

Bank Clearings	\$ 27,300,000
Building Const.	1,234,000
Com. Failures	100,500

Quebec:

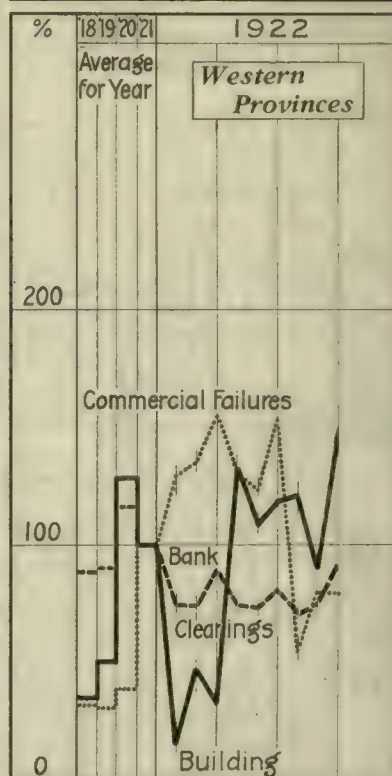
Bank Clearings	\$ 407,600,000
Building Const.	7,238,700
Com. Failures	1,788,895

Ontario:

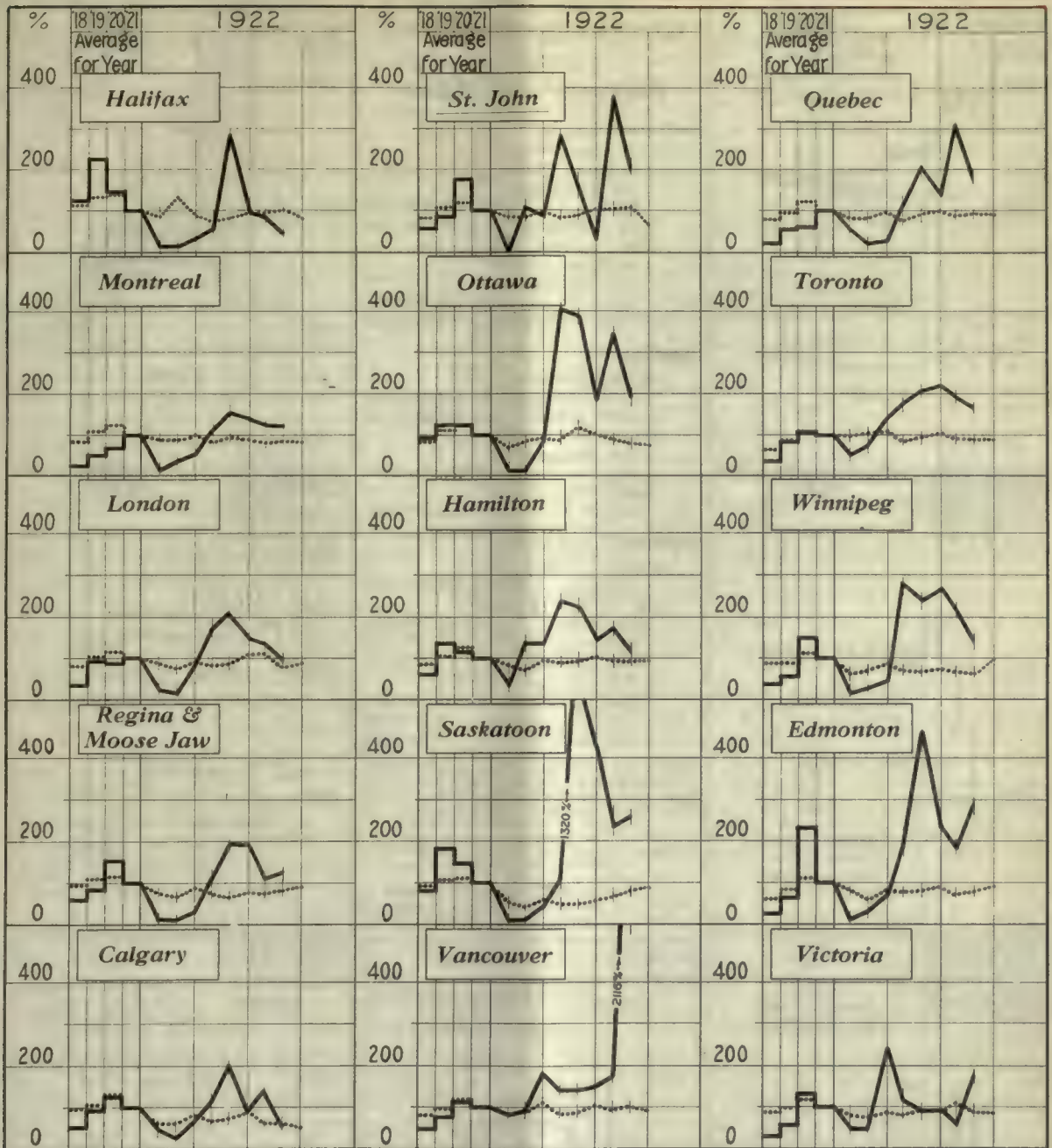
Bank Clearings	\$ 471,500,000
Building Const.	13,984,000
Com. Failures	853,933

Western Provinces:

Bank Clearings	\$ 354,600,000
Building Const.	6,856,800
Com. Failures	719,231



In the above charts the average monthly figure for the last completed year (1921) has in each case been taken as 100; the monthly averages for previous years and the actual months figures for the current year are expressed as percentages below or above.



Conditions in Principal Cities (September)
Bank Clearings (dotted lines) and Building Construction (black lines)

Halifax:
 Bank Clearings... \$11,833,000
 Building Construction... 81,352

St. John:
 Bank Clearings... \$10,929,000
 Building Construction... 94,500

Quebec:
 Bank Clearings... \$23,127,000
 Building Construction... 539,301

Montreal:
 Bank Clearings... \$381,266,000
 Building Construction... 2,080,270

Ottawa:
 Bank Clearings... \$26,412,000
 Building Construction... 416,615

Toronto:
 Bank Clearings... \$379,360,000
 Building Construction... 3,118,405

London:
 Bank Clearings... \$11,358,000
 Building Construction... 202,550

Hamilton:
 Bank Clearings... \$23,798,000
 Building Construction... 359,700

Winnipeg:
 Bank Clearings... \$217,539,000
 Building Construction... 627,000

Regina & Moose Jaw:
 Bank Clearings... \$20,931,000
 Building Construction... 272,260

Saskatoon:
 Bank Clearings... \$7,641,000
 Building Construction... 169,019

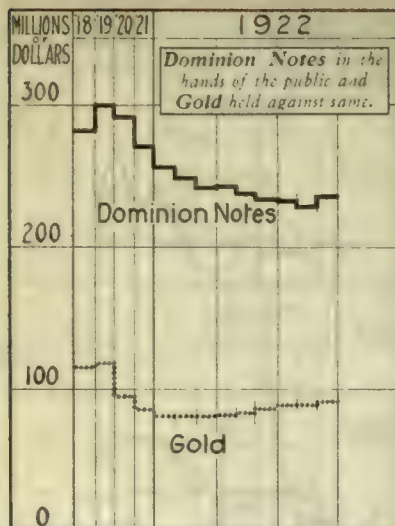
Edmonton:
 Bank Clearings... \$18,783,000
 Building Construction... 380,330

Calgary:
 Bank Clearings... \$14,478,000
 Building Construction... 108,000

Vancouver:
 Bank Clearings... \$55,898,000
 Building Construction... 5,367,745

Victoria:
 Bank Clearings... \$8,469,000
 Building Construction... 55,150

In the above charts the average monthly figure for the last completed year (1921) has in each case been taken as 100; the monthly averages for previous years and the actual months figures for the current year are expressed as percentages below or above.



Currency, Banking and Railway Conditions

Currency:

Domestic Notes in hands of Public (see chart upper left) \$ 234,719,769
Gold against same 91,427,409
Bank Notes in hands of Public (see chart upper right) \$ 176,918,869
Gold held by Banks 91,721,956

Banking:

Savings (see chart centre left) \$1,158,462,380
Current Loans 1,114,678,735
Liabilities to Public (see chart centre left) \$2,342,980,663
Assets, Quick and Liquid 1,157,747,831

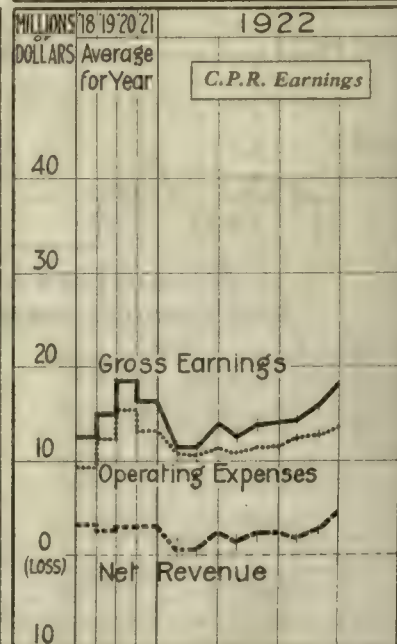
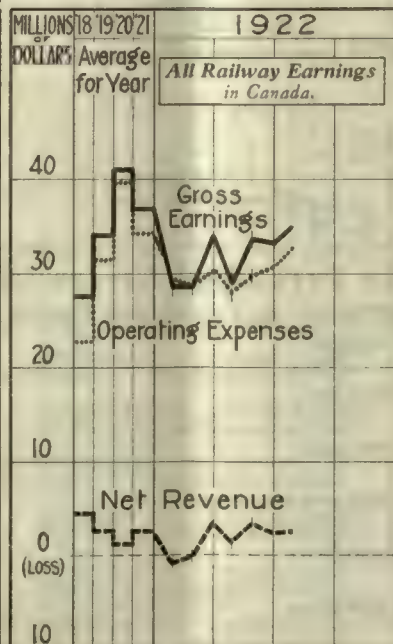
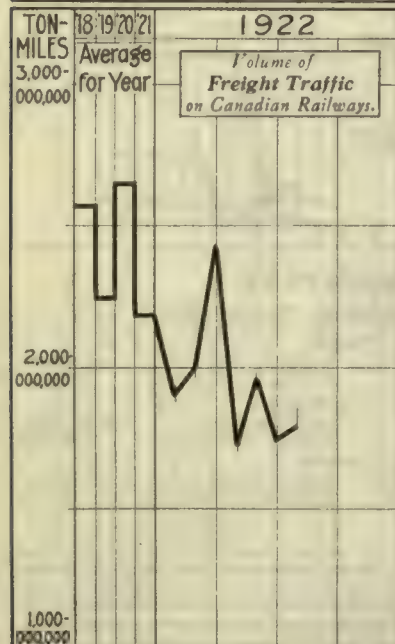
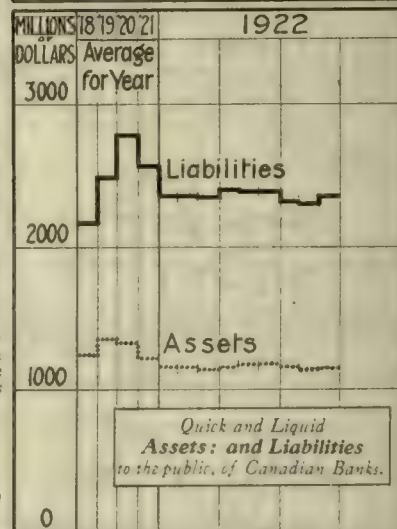
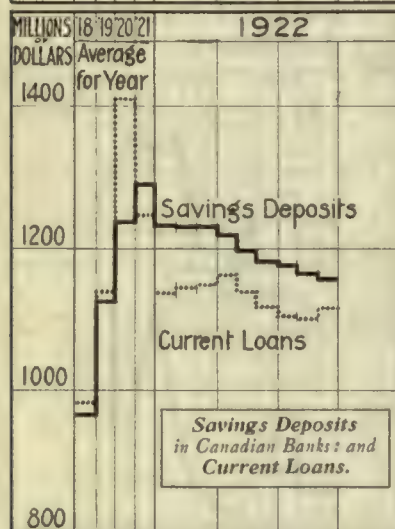
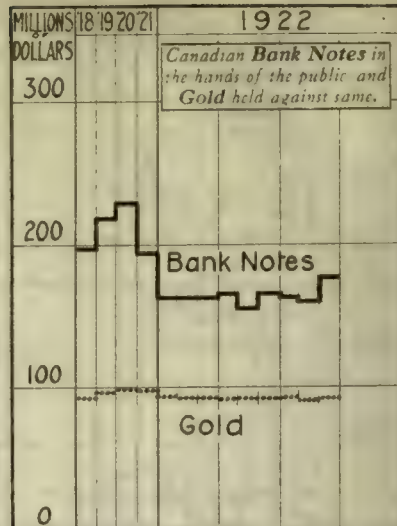
Railway: (chart below)

Freight Traffic in ton miles. (July) \$1,787,836,608
All Roads—Gross Earnings \$ 35,086,075
Operating Exps. 32,676,102
Net Revenue 2,409,973
C.P.R.—Gross Earnings (Sept.) \$ 18,149,528
Operating Exps. 13,563,595
Net Revenue 4,585,933

Gold against Bank Notes is made up of three items: Specie held by Banks; Bank Note Redemption Fund in the hands of the Government; and the Gold, as distinguished from Dominion Notes deposited in the Central Gold Reserve.

Savings Deposits are Deposits repayment of which is subject to Notice.

C.P.R. earnings refers only to the earnings of the railway and does not include earnings of Hotels, Telegraphs, Ocean Steamships, etc.



tardy of complete eradication. In general Canada's prestige seems to rest rather on the volume of her wheat production than on its quality. The public visions wide-spread agricultural lands, reads of an expected yield of 388,000,000 bushels of wheat and of the Dominion's ascension to second place among the wheat-producing countries of the globe, and is impressed to such an extent with the vast figures of output that facts of quality become largely enshadowed.

Recently a Canadian member resigned from the committee of the British Empire Exhibition in London, Eng., as a protest, amongst other things, against that body's obstinate conviction that Canada could not, from her own flour, make bread sufficiently palatable to serve at meals at the Exhibition. At precisely the same time American millers were wincing at the newly enacted American tariff because they knew it was imperative for them to continue their purchases of Canadian wheat to keep up the standard of American flour, and British millers, rather the best judges of wheat in the United Kingdom, were sending their complaints across the Atlantic that American shippers had been tampering with Canadian wheat passing through their hands and mixing American grain with it with the object of passing their product off as the Canadian wheat so desirable to British millers.

There is great significance in the fact that in acreage production Canada outyields other countries engaging in grain production on the same extensive scale, and that the first returns of the Western wheat crop record over 70 per cent. as grading Number One Northern. There is a reason why the world's wheat championship as far back as 1893, went to a plot of land within the shadow of the Arctic circle; why for ten years successively the world's first wheat honors went to various sections of Western Canada; why in the world competition in 1921 Canada secured twenty-two of the twenty-five prizes offered for wheat. Only the Canadian climate and Canadian soil working in conjunction could have produced a Seager Wheeler, to capture the world's wheat championship five times and create a world's production record with eighty-two bushels to the acre.

The Valuable Qualities of Canadian Hard

Exhaustive scientific tests in both Canada and the United States have proved that Canadian-grown seed has stronger powers of germination than that grown further south and is more desirable in many ways. American farmers discovered this for themselves and commenced importing Canadian grains many years ago. The peculiarly hard qualities of the Canadian-grown wheat are appreciated in the milling industry, and each year large quantities of Canadian wheat are purchased by United States millers to mix with the native grain and

raise the standard of their flour. Canada has taken American oats, barley and alfalfa, and has so improved them that her climate has vanquished American growers in competition and brought about an extensive importation of the seed. The wheat crop of Seager Wheeler sells for thirty dollars a bushel.

There can be no doubt but that Canadian wheat has materially benefited agriculture in many countries. In 1921 Canada lost the world's wheat championship after holding it ten years, but this triumph for the United States was only effected through the use of Canadian-produced seed which the Montana farmer, the new champion, had imported. Canadian wheat goes all over the world, but its benefit to agriculture is only incidentally disclosed on occasions when some story trickles back and the Dominion is made aware of what she is doing.

This thought is raised by a story which has recently come from France relating to Aristide Briand, seven times Premier of the French Republic. Probably as a hobby he bought a farm in Normandy and brought his qualities of astuteness into question, for the farm was notorious as the worst piece of land in the district. The Premier, however, tackled the question in his characteristically aggressive manner, bringing science and expert knowledge to bear upon it. He had the soil analysed and treated, and as a final measure imported wheat from Canada. This fall he added a further triumph to his successful career by carrying away the first wheat prize at the Normandy agricultural fair. It was an achievement for Canadian wheat probably typical of many other countries.

Canada's Apple Export Industry

In the year 1921 Canada produced 4,046,813 barrels of commercial apples valued at \$29,898,649. The Province of Nova Scotia accounted for 2,036,065 barrels; British Columbia for 1,057,483 barrels; Ontario for 885,065 barrels; Quebec, 35,200 barrels; and New Brunswick, 33,000 barrels. This year the Nova Scotia yield is estimated at 1,577,000 barrels; that of British Columbia, 795,000 barrels; Ontario, 1,151,000 barrels; Quebec, 61,600 barrels; and New Brunswick, 41,250 barrels—making a total harvest for the Dominion of about 3,625,850 barrels, a slight decrease from the 1921 production, but an increase over that of 1920. Furthermore the crop is stated to be uniformly clean and of good quality.

Government records show that there has been a substantial increase in apple production in Canada in recent years, and that the culture is experiencing a consistent growth. In the year 1901 all orchard and small fruits in Nova Scotia were worth only \$1,407,369 in production, in Ontario \$7,809,084, in Quebec \$2,564,801, in New Brunswick \$394,337 and in British Columbia \$453,794, making a total value for the Dominion in that year of \$12,629,385. By 1911 the value of orchard fruits alone in Nova Scotia had risen to \$1,548,855, in New Brunswick to \$264,915, in Quebec to \$1,189,926, in Ontario to \$5,566,870, and in British Columbia to \$1,082,481, making the total value in the Dominion of orchard fruits that year \$9,653,047. Whilst all the Canadian provinces have exhibited gratifying progress in fruit production the greatly increased volume of the crop at the present time is largely due to the development of apple culture in British

Columbia, which was a negligible factor at the beginning of the century, and whose Okanagan Valley alone this year is expected to account for 2,281,000 boxes of high quality fruit.

Exports in 1922

Exports of Canadian apples in the fiscal year 1922, which would include the disposal of the 1921 crop, amounted to 1,845,955 barrels valued at \$8,854,379, as against 1,358,499 barrels in the previous year worth \$8,299,099, and 873,882 barrels worth \$4,242,219 in 1920. The United Kingdom is the principal importer of Canadian apples, taking more than two-thirds of the entire crop. The United States is the next best customer, followed by the following in the order named:—Australia, Bermuda, Newfoundland and New Zealand. The rapid growth of the Canadian apple export industry may be judged from the fact that in 1907 total exports amounted to only 38,811 barrels; in 1910 to 32,304 barrels; and in 1915 to 1,117,336 barrels.

Canada's apple market lies in the European continent, more especially in the British Isles, to which practically the entire Canadian export trade finds its way at the present time. Of Nova Scotia's total exports of 1,288,241 barrels and 6,494 boxes in 1921, 1,171,827 barrels and the entire box shipments went to various United Kingdom ports. There is a great apple export trade developing on the Pacific coast via the Panama Canal to Europe, and last year 500,000 boxes of apples travelled from Vancouver across the Atlantic by this route. This year shipments are expected to be materially increased, and faith in the permanency of this traffic and its expansion is indicated in the provision on steamers sailing from Vancouver to Europe of refrigerator space for carrying 600,000 boxes of British Columbia apples. A new feature of the Canadian export apple trade to Great Britain may be added this year if the Ontario Government carries out its plan to send shipments of the provincial apples direct to the British markets, following up the success it has achieved with its peach and plum shipments.

U.S. Canada's Competitor

With a comparatively small proportion of the land in Canada adapted to apple culture under cultivation, it may be thought that there is not sufficient encouragement to increase apple production in view of the limited extent of the Canadian export market. As a matter of fact, with intelligent development and commercial aggression, the British market would be in a position to absorb a considerably greater volume of the Canadian product. Whilst the United Kingdom may be Canada's best apple customer it occupies the same position with regard to the United States. Annual exports from the Republic to the British Isles for the past ten years have averaged 1,099,412 barrels per year, or 65.8 per cent of the total annual apple exports of the country. The United States apple export trade is negligible in comparison to its production, but at the present time is occupying the British market in competition with the Canadian product, which meets on a basis of equal tariff. With an increased Canadian production, there is little doubt Canada could secure the entire market, even if it were necessary to give the Dominion product a preferential entry.

There are gratifying indications of developing interest in apple culture in Canada and there is ample room for such expansion. There are yet unsettled other Okanagan and Annapolis valleys which only the years to come will make known to the world. In New Brunswick, for instance, which has a very small output in comparison with its possibilities, interest in apple growing is reviving, and the St. John Valley is doubtless destined to take its place with the first apple regions of the continent. In 1921 Nova Scotia had the richest year in its history, from the standpoint of the apple industry, and more than \$6,000,000 was left in the Annapolis Valley by foreign buyers. Even the Prairie Provinces are proving that they can grow excellent fruit, and, according to government authority,

Manitoba this year has a crop of apples exceeding anything yet achieved there. Soon there will not be a province in Canada but is raising apples sufficient at least for its own consumption.

Quebec's Better Farming Train

On its six weeks' tour of the Province of Quebec during the past summer over one hundred thousand people visited the Better Farming Special Train, which was organized by the Provincial Department of Agriculture and the Canadian Pacific Railway, with the co-operation of the Federal Department of Agriculture and the Oka and St. Anne de la Pocatiere agricultural schools. The train was formed of fourteen railway cars, which were dedicated to the different phases of agriculture—such as live stock, field crops, farm engineering, horticulture, poultry, bee-keeping and sugar-making, and home industries. Great interest was shown by all those who inspected the train, and in all probability this initial venture will become a permanent feature of the educational programme of the provincial government in future.

There is, at the present time, a splendid opportunity for farmers of Quebec to engage in the export bacon trade to the United Kingdom, and the Canadian Meat Packers Association has an exhibit on the train of the various types of bacon demanded by the English consumers, as well as those for which there is no demand. Live hogs, both fat and bacon types, were kept in the live-stock section of the train, and an expert in charge carefully explained to all who visited the train the bacon situation in the Old Country and urged the farmers of the province to take a greater interest in this industry. Pure-bred dairy cattle were also on exhibition, while another car was devoted to both the wool and mutton types of sheep. Each afternoon an open-air demonstration was given to the farmer, setting forth the good and bad points of each animal exhibited in respect to their desirability for raising in the Province of Quebec.

Many Attractive Exhibits

An attractive display of grains, grasses, cereals, roots and vegetables was exhibited by MacDonald College. The grasses were mounted on green baize and hung on the walls of the car, while the grain samples were placed in small glass bottles and artistically arranged on a long counter running the length of the railway coach. A section was also reserved for tobacco culture. This industry has begun to assume large proportions in Quebec, and the farmers are taking a greater interest in the culture of the tobacco plant than ever before. A model tobacco-curing shed, advocated by the Provincial Department of Agriculture for tobacco growers, was on display

As one of the most profitable sidelines to farming, poultry claimed a large share of the attention devoted to the different exhibits. Four representative breeds were shown, including the Chanticleer which is a native of the province. Incubation and brooding apparatus of various types were shown, as well as a model poultry house. Placards were profusely spread over the walls of the car, calling attention to common faults in the raising of poultry, and steps to be taken to avoid same. Part of this car was given over to the display of modern farm implements, including drainage, cultivating, electric light and household machinery.

The car devoted to maple sugar and honey attracted a great deal of attention. This industry is probably one of the oldest in the province, and the farmer with a few maple trees on his farm is indeed fortunate, for there is a profitable and ready market in Canada, the United Kingdom and the United States for all the maple sugar and syrup he can supply. The old-fashioned method of boiling the sap in a huge iron cauldron was illustrated, while farther on in the car a complete up-to-date maple sugar manufacturing outfit with its sanitary boiler, pans, flues, receptacles, etc., was shown. Large and small bee-hives of the latest designs were exhibited, as well as an old straw hive used by the early settlers of the province.

The Home Industries Car

The Home Industries car was undoubtedly the greatest point of interest in the whole train for the women. Many of the old relics of the early habitation were on display, including flintlocks, powder-horns, grandfather's clock, pottery, hand-loom, and weaving machines, all home-made. Weaving methods employed by the farmers' wives in the remote sections of the province in the manufacture of homespun were also demonstrated. Many of the samples of their handiwork were of the finest workmanship, and brilliantly colored with home-made dyes.

The educational value of the agricultural demonstration train cannot be over-estimated. In the outlying districts of the province where the populace is too scattered to have an agricultural exhibition, or where the inhabitants are too far distant from those of the more thickly-settled districts, this train serves as a courier between the agricultural colleges, federal and provincial departments of agriculture and other organizations interested in the advancement of agriculture, in bringing to the farmer information of the new advances in the science of agriculture. Much time and labor were expended in equipping the different cars and careful attention was given to selecting the exhibits. The train has been appropriately termed a "college on wheels."

Agriculture in Saskatchewan

The total area of the Province of Saskatchewan is 161,088,000 acres, of which 155,764,480 acres are land and 5,353,520 acres water. The total area of the province which has been surveyed to date is 79,027,878 acres, of which 57,884,160 acres have been declared arable. Of the available area of arable land, 29,079,219 acres are under cultivation. A total of 35,397,200 acres have been settled upon as homesteads and pre-emptions and there remains available for entry 5,068,000 acres of surveyed territory.

In 1921 the total estimated agricultural wealth of the Province of Saskatchewan was \$1,513,146,000, the province having, for the first time, assumed the second place among the Canadian provinces, coming after Ontario. This agricultural wealth was made up of land valued at \$863,961,000; buildings, \$121,703,000; implements, \$111,170,000; livestock, \$154,865,000; poultry, \$7,463,000; animals on fur farms, \$272,000; and agricultural production, \$253,712,000. Saskatchewan led the Canadian provinces in the value of its settled land, took second place in the value of its livestock, poultry and agricultural production, and third place in the estimated value of its buildings and farm implements.

Though Saskatchewan is so to the fore in all phases of agricultural production, the outstanding feature of her territory, from the border to the far north, is her expansive wheat fields. As Canada is yearly coming, with greater justice, to be known as the granary of the British Empire, so is Saskatchewan continually further meriting the title of the granary of Canada. This province, which in 1890 accounted for a bare four per cent of the Dominion's annual wheat crop and in 1900 for 7.8 per cent, produced in 1921 approximately 50 per cent of all the Canadian wheat. In 1922, with an estimated wheat yield of 230,218,000 bushels out of the total estimated Dominion production of 388,733,000 bushels, she will account for practically sixty per cent of all Dominion wheat.

In the seventeen-year period from 1905 to 1921 Saskatchewan maintained an average yield over her entire cultivated area of 14.9 bushels of wheat to the acre, the highest average yield being 25.2 bushels in 1915 and the lowest 8.5 bushels in 1919. In the same period the province's average per acre for oats was 32.7 bushels, the highest being 47.1 bushels per acre in 1909 and the lowest 21.5 in 1918. The average barley production for the period was 24.1 bushels, the highest average 33.2 in 1915 and the lowest 17 in 1918. Flax for the seventeen years averaged 8.0 bushels, reaching a zenith in 1905 with 15.7 and the lowest yield in 1919 with 4.8 bushels for the acre. Rye has maintained an average of 16.9 bushels per acre throughout the seventeen years, with the highest yield 28.1 in 1915 and the lowest 10.5 in 1919. The province's potato average is 141.3 bushels.

Exports are Heavy

The greater proportion of Saskatchewan's annual agricultural production is, of course, available for export, and the total value of such exports to the farmer in 1921 was \$173,461,000. Included in this volume were 170,000,000 bushels of wheat worth \$127,500,000. Livestock was also heavily represented, receipts from Saskatchewan at the Union Stock Yards, Winnipeg, being 38 per cent of the cattle, 31 per cent of the hogs, 29 per cent of the sheep, and 49 per cent of the swine received there, without taking into account animals sent to the Moose Jaw and Prince Albert yards. A heavy item of production was that of the dairy, amounting to nearly \$19,000,000.

Saskatchewan is making a fair bid in many lines of production for agricultural supremacy among the provinces of the Dominion, and has made a rapid and spectacular rise to second place. On its gigantic wheat fields more than half the crop of the Dominion is being raised, and adjacent to them are fine stock farms with excellent horses and beef cattle and dairy farms with herds which are yearly becoming more valuable. Still, Saskatchewan, first of all, suggests prime wheat, and in this regard its prestige will increase. Though Canada's wheat production

at the present time is less than half that of the United States, Saskatchewan produces more wheat each year than any three of the leading wheat-growing states of the Union, and as yet not one-half of her surveyed arable land has been rendered productive.

A Poultry Province

The report of the establishment of a large poultry community north of Toronto is in keeping with the aggressive policy inaugurated by the Provincial Department of Agriculture and the Ontario Agricultural College for greater poultry production. This farm, some 500 acres in extent, will be subdivided into 75 poultry plants, each owned independently, but worked on a semi-co-operative basis. Upward of 100,000 layers will be accommodated, and it is estimated that 100 cases or more of eggs a day will be produced when the community is fully developed. This product will be graded in accordance with the Government standard, and sold under the community trade mark direct to the consumers.

It is the intention of the promoters to develop this community along the lines used in establishing the famous "Egg City" of Petaluma, in the state of California. Organized and built entirely on the production of White Leghorns, this city has blossomed out into a model town with all modern civic improvements, and with a population of over 6,000 people. There are more than 6,000,000 hens in the district, and annually over 400 cars of eggs are shipped therefrom.

Ontario is the leading poultry province in the Dominion, closely followed by the Western Province of Saskatchewan. During 1921 the number of poultry in the province was 11,458,206, which compares with 9,554,009 in the Province of Saskatchewan. At the Provincial Winter Fair at Guelph, each December, there is one of the greatest poultry shows on the continent, with an entry list that averages around 5,000 birds. In competition with poultry producers in other parts of the Dominion and the United States, Ontario has held her own, and for many years has been a consistent winner of the principal prizes.

Active Government Encouragement

The Provincial Government has not been laggard in promoting interest in poultry raising. Poultry instructors are employed by the province, who visit all sections, giving lectures and demonstrations on the best breeds, as well as advising farmers regarding markets, etc. Sixty poultry associations have been organized in Ontario for the general advancement of this industry. In addition the Government annually distributes to the rural schools a great many pure-bred eggs for hatching, in an endeavor to foster an interest in poultry raising among the school children. Fifty egg circles have been established for the handling of eggs, which has

resulted in the poultry raiser securing a better price for his eggs than heretofore. According to the last census there were 100 specialized farms with 500 or more birds.

There has been some talk lately of establishing at a centrally located point in the province, a community chick hatchery and brooding station. The Provincial Department of Agriculture, which is behind the scheme, claims that the hatching and brooding season comes at a time when the farmer is busy with other work and can ill afford to spare the time to give the birds careful attention, with the result that poultry is neglected—and the number of birds materially lessened. It is also claimed that by working on a co-operative basis the cost of hatching would be materially reduced. The farmer, whether he has a great or small number of eggs to hatch, could put them into the community incubator, and the incubating of eggs on a wholesale scale would considerably reduce the individual cost per eggs for hatching. This plan has been tried out with success in Saskatchewan.

Canada imports approximately five and a half million dozen eggs per annum, and exports a slightly larger number. There is an active demand for Canadian eggs both at home and abroad, and the market is as yet not fully developed. There is a great opportunity for poultry raising and egg marketing in Ontario, and the manner in which Ontario farmers are taking up this profitable industry as a sideline to agriculture augurs well for the future.

A Prosperous Year

Canada's field crops for 1922 are estimated by the Financial Post to be worth approximately \$1,119,273,583, as against \$908,381,870 in the preceding year, an increase of about \$210,000,000. The various products and their values, with 1921 figures in brackets, are as follows: Wheat \$369,334,350 (\$242,936,000), oats \$234,510,360 (\$146,395,300), barley \$40,107,630 (\$28,254,150), rye \$34,721,260 (\$15,399,300), flax \$10,386,080 (\$5,938,400), peas \$5,301,000 (\$5,439,400), beans \$2,791,600 (\$3,155,800), buckwheat \$7,825,000 (\$7,285,100), mixed grains \$21,178,500 (\$13,901,220), corn (husking) \$11,927,200 (\$12,317,000), corn (fodder) \$34,937,000 (\$44,880,800), potatoes \$35,940,100 (\$82,147,600), turnips (roots) \$35,550,240 (\$26,620,400), hay and clover \$264,265,000 (\$267,764,200), alfalfa \$8,714,362 (\$13,211,000), and sugar beets \$1,722,000 (\$1,742,000).

There was a substantial lowering of prices during the period under review, and a corresponding reduction in the scale of wages, with the result that farming conditions were in a more or less unsettled state. With lower costs of planting, threshing and marketing the margin of profit on the wheat crop should be better

than last year. Owing to the phenomenal yield of nearly all agricultural products this year, few decreases in value as compared with the previous twelve months are recorded. Increases are shown in wheat, oats, barley, rye, flax, buckwheat, mixed grains, and turnips, while peas, beans, corn (both husking and fodder), potatoes, hay and clover, alfalfa and sugar beets, register decreases.

A Per Capita Value of \$320.00

The same authority roughly estimates the value of products of the ground, the seas and the forest, not including highly manufactured products or wealth from water-power developed, as slightly over \$2,500,000,000, or, based on a population of eight and three-quarter millions of people, a per capita value of about \$320.00. Agricultural products, of course, account for the largest share of the total, amounting to \$1,119,273,582. Livestock comes next with a value of \$766,720,000, followed in order of importance by paper and pulp with \$204,562,000, lumber \$128,311,437, minerals \$117,325,437, dairy \$110,207,584, fisheries \$34,930,935, furs \$10,122,751, wool \$2,565,000, and tobacco \$2,400,000. These figures are obtained on the 1922 Winnipeg average cost price basis.

The large grain crop in the Prairie Provinces will enable the farmer to get back on his feet again, make needed improvements on his farm, and leave him an advantageous position to start the new year. Many companies, owing to the tightness of money and the depressed condition of the home market early in the year, have been holding up development plans, but with the commencement of the movement of the wheat crop money has become easier and a number of manufacturers have announced they will go ahead with their original plans. Mining and pulp and paper industries are unusually active, and reports from all sources indicate that the coming year will see an active period of expansion.

Expansion of Pulp and Paper Industry

There is little doubt but that the Dominion of Canada would to-day occupy a favorable and enviable place in world regard if all other of its multifarious industries were neglected and it did nothing else but fill the demands for pulp and paper. To-day many countries of the globe are coming to Canada for their supplies of these wood products, and the year has been one of surpassing importance for the pulp and paper industry. Month by month its prestige has increased, and nearing the termination of the year every mill in the country, working at high capacity, and effecting extensions at a rapid rate, fail to adequately satisfy customers.

The pulp and paper industry ranks third among Canadian activities in its annual revenue. As a producer of pulp and newsprint Canada takes second place to the United States, but the Canadian figures of output are ascending so rapidly that on the authority of the most reliable experts the time is in sight when Canada will lead the world as a newsprint producer.

After the depression of 1921 the present year has seen a remarkable expansion in the Canadian industry. For the year ending April 1st, 1922, pulp and paper exports had a total value of over \$180,000,000, a figure exceeded only by exports of wheat and agricultural products. The Canadian newsprint mills now have a rated capacity of about 5,525 tons per day, equivalent to an output of 1,250,000 tons per year, which is double the output of any year prior to 1917. In addition Canadian mills are equipped to produce 2,500 tons of pulp daily. The combined output represents a daily cut of 6,000 acres of forest land.

An Invested Capital of \$347,000,000

The Canadian pulp and paper industry is, in fact, accomplishing so much that it is a difficult matter to keep accurate trace of it, and statistics which apply to-day may be entirely incorrect to-morrow. According to government figures for 1920, the industry employed an invested capital of over \$347,000,000, of which slightly more than half was in the Province of Quebec. In the first six months of 1922, Canadian mills produced over 516,000 tons of newsprint as compared with 612,000 produced by United States mills. The Canadian newsprint output during this six months period is stated to have been 93.6 per cent. of mill capacity.

Whilst the volume of United States newsprint production has remained practically stationary at around 1,300,000 tons since 1913, Canadian production has increased from 350,000 tons to 812,000 tons in the same time. Exports to the United States have increased from 219,602 tons to 791,978 tons. The United States has, in fact, come to depend on Canada for 85 per cent. of the newsprint in addition to huge quantities of pulp. There is also an extensive trade being built up, and increasing rapidly, with the Antipodes and the Orient, and in this regard the Pacific coast as a pulp and paper area is fast developing in importance. Total pulp and paper exports for the month of June this year amounted in value to \$10,534,896, and for July, \$9,738,252. Production in the latter month was nearly double that of the corresponding month in 1921, though, due to lower prices, the value was only slightly increased.

Newsprint and Pulp Mills Full Capacity

Without apparent exception, towards the closing of the year, Canadian newsprint and pulp mills are operating to full capacity, whilst the extensions to existing plants under way, new plants under construction, and further establishments definitely assured for the near future have combined to constitute what is probably the most outstanding feature of industrial expansion in the 1922 period in Canada. Noted below are many of the extensions under way or proposed additions to the Canadian pulp and paper industry.

The headquarters of the Belgo Pulp and Paper Company have been transferred from Belgium to Canada with executive offices at Montreal. The new company has an authorized capital of \$20,000,000, and will increase its output next year from 200 tons to 350 tons, making an annual production of slightly over 100,000 tons.

In February last the new newsprint mill of the St. Maurice Lumber Co. Ltd., at Three Rivers, commenced operations. This mill now has a maximum capacity of 340 tons per day.

At Point Rouge the Donnacona Paper Company is erecting a new groundwood mill.

The Thunder Bay Pulp and Paper Company, at Port Arthur, is increasing its output of groundwood pulp to 100 tons per day, and installing a paper unit capable of turning out 60 tons per day.

The Premier Paper and Power Company, at Hartville, Nova Scotia, is to install a standard newsprint machine with a capacity of 60 tons a day.

Many Plants Projected

The location at Three Rivers of the Wayagamack Company and the St. Maurice Lumber Company (the International Paper Company) will bring the district's potential output of paper to about 800 tons a day, or 240,000 tons a year, in addition to 130,000 tons of treated pulp, making this section of Quebec one of Canada's first pulp and paper areas.

Plants projected or under construction would seem to be almost as numerous as those already established and operating.

The Provincial Paper Mills are erecting a large plant at Port Arthur.

The British Columbia Minister of Lands recently announced that a pulp and paper plant would be established on Columbia Lake by an English concern.

According to its agreement with the Ontario Government, the Great Lakes Pulp and Paper Company is to spend \$2,000,000 within three years on the erection of a paper mill at Fort William.

The Bathurst Company Ltd. is installing a newsprint machine in its mill at Bathurst, New Brunswick, which, according to directors' announcement, will be in operation in the spring and employing 500 persons.

In British Columbia eastern capitalists have secured an option on a site at New Westminster for a paper mill, and a pulp and paper mill is projected for Prince George in the same province.

Certain American interests are erecting a plant at Elko, in the Kootenay district of British Columbia, where substantial limits of timber have been secured. Officials state that the first unit of the plant, producing 50 tons of paper daily, will be operating in the fall of 1923.

On the Pacific coast the Seaman Paper Company of Chicago and Vancouver interests are reported as being about to build a paper mill within 100 miles from the great port.

Michigan interests are said to be negotiating with the city of Kingston, Ontario, with the object of building a pulp and paper mill in the old capital.

Activity from Coast to Coast

All over the country, from coast to coast, this extension to the Dominion's premier industrial activity is evident. Especially significant is the development on the Pacific coast. Pulp and paper is being manufactured there, and being shipped down to California and other Pacific coast states, as well as to Australia, New Zealand, Japan and China. That such extension is urgently needed in that region would seem to be evidenced in the fact that Oriental buyers have placed large orders with firms in Three Rivers in Quebec, and that steamers have this summer loaded there for the Antipodes and the countries of the Orient.

There can be little doubt but that the time is almost in sight when Canada will leave the United States behind in pulp and newsprint production, and assume the leadership of the entire world in this regard. This she only does through her possession of magnificent forests of tremendous extent. Forests are not inexhaustible, as other nations have discovered to their sorrow, and Canada is taking steps to see that her forested areas are reasonably conserved, maintaining their valuable supplies and retaining for the Dominion's pulp and paper industry the important place in economic affairs it occupies to-day, and is coming increasingly to fill. In this national work, for the greater part, the governments have the earnest and sincere co operation of the various companies exploiting them, instigated not only by a national duty, but a realization that Canada is one of the few remaining lands with extensive forest resources, and that their continued prosperity lies in the intelligent manner in which they exploit and conserve their holdings.

Commercial Flying in Canada

Commercial flying in Canada experienced a period of readjustment during 1921, according to a report of the Canadian Air Board, and many of the small, insufficiently equipped aeroplane companies were forced out of business owing to the cost of operating machines and the lack of public response to pleasure-flying due to the fancy prices demanded. The tremendous interest evinced in flying machines after the war resulted in numerous companies springing up all over the Dominion, and the public at that time were willing and even eager to pay high prices in order to experience the thrill of flying, but the publicity given to accidents shook the public faith in this form of travelling, with the inevitable result that many companies dependent upon passenger travelling for their income were forced to discontinue business.

Great attention was paid to developing aerial photography during the period under review, and this phase of the industry rapidly assumed a position of importance. Many business companies, as well as the different governments, engaged aerial photographers to take photographs of their various undertakings. The lumber, pulp and paper companies especially were active in aerial photography, many having their entire timber limits photographed, and from the prints were able to accurately determine the amount of timber on their holdings, thus saving a great amount of time and labor. In the mountainous regions of British Columbia the Geodetic Survey of Canada was greatly assisted by aeroplanes, which were able to penetrate where it was impossible for the surveyors to go on foot.

In addition, aerial photography was utilized to a great extent for advertising purposes. Well-known scenic and historical points in the Dominion have been photographed from the air; moving pictures and post-cards made from the prints have had a wide sale. Cities and business corporations have also found it advantageous to have aerial pictures taken of their grounds, plants, public buildings, etc., both for advertising and private records.

Great Increase in Freight Carrying

The work of aeroplanes in British Columbia and Quebec in combating the forest-fire menace is well-known to the Canadian public. Canada now has twenty seaplanes and five land machines in action on forest survey and forest-fire prevention. Seventeen of these are Dominion Air Board machines, and eight are owned by private companies. Numerous forest fires have been extinguished before they could get under way and do untold damage due to the efficiency of aeroplane patrol service in reporting these outbreaks, and rushing fire-fighters and equipment to the scene of the conflagration. This

form of aeroplane work has proved so popular that additional seaplanes are needed at the Jericho air station in British Columbia to fill demands for air surveys of fire-swept areas, customs patrol, and transportation of men and equipment.

The most outstanding feature of the report was the remarkable increase in freight or express carried, which rose from 6,740 pounds in 1920 to 77,850 pounds in 1921, an increase of several hundred per cent. The statistical summary of aviation in Canada shows that the number of firms operating decreased from 35 in 1920 to 31 in 1921. The number of flights 18,671, mileage 422,462 and total duration of 6,505 flying hours in 1920, dropped to 10,385 flights, 294,449 miles and 4,347 hours in 1921. The number of passengers in the same period decreased from 15,265 to 9,153.

Air stations have been erected in the majority of the provinces of the Dominion by the Federal Government, and it is proposed to have stations in all provinces in the near future, so that an aviator flying across country will be able to descend at any of these air harbors and secure oil, gasoline, spare parts, etc., if in need. There are other schemes under way for the advancement of commercial flying in Canada, and the comparative freedom from airplane accidents in the latter part of 1921 has done much to restore this industry in public confidence.

Canada an Export Country.

There is a general tendency abroad to place Canada's agricultural prestige so high as to largely disregard her many other assets. In the main the conception of the Dominion is that of countless farms and ranches productive of millions of bushels of fine grain and gigantic herds of high quality cattle. Without disparaging this first feature of Canadian economic life it may be pointed out that these vast agricultural expanses are broken by myriad cities and small towns which are fostering industry in the equasion of agricultural progress. In this respect Canada is largely unique among the Dominions of the British Empire, coming, to a greater degree each year, to not only supply many of her own needs, but furnishing other Dominions with their requirements and shipping a variety of goods to the outside world.

To those who have come to regard Canada in a purely agricultural light it will probably come as a surprise to learn that whilst the agricultural production of the country in 1921 was not quite \$160 per capita of population, the manufacturing output of the year 1919, based on the census population of 1921, was more than \$400 per capita. It may be further illuminating to learn that Canada's export trade in the fiscal year ending March, 1922, amounted to \$85 per capita, and in the previous year, when produce values were much higher, \$138 per capita, leading the entire world in this respect. Canada has, in fact, in her brief history, exhibited a development in the export trade which can be regarded as little less than phenomenal.

Fourth Position in Export Trade

Leading the world in per capita export trade, Canada occupies fourth position among the nations of the world in the volume and value of these same exports. In 1905 Canada, with exports of slightly over \$200,000,000,

occupied the ninth place, being exceeded in order by United Kingdom, United States, Germany, France, Belgium, Italy, Australia and Argentine. Changes had occurred by 1913. Germany had wrested the second place from the United States and the Argentine and Canada had passed Australia, thus making Canada eighth on the list, her exports being \$400,000,000. By the end of the post-war period the United States had assumed the lead with Canada in third position. In 1920 France forged into third place, and in the beginning of 1922 the United Kingdom resumed its former supremacy, with Canada retaining its fourth place, closely pressed by Japan.

In the year 1868, one year after Confederation, the value of Canadian exports amounted to \$57,567,888. By 1880 they had reached \$87,911,458. Twenty years later, in 1900, they had mounted to \$191,894,723. In 1910 they were \$298,763,993, and in 1921, \$1,210,428,119. Declining values in the following year brought them down to \$753,927,009 in 1922, or approximately double their value of 1915. Of this latter total, agricultural products, including both vegetable and animal, accounted for \$457,278,204.

In the year 1922 the United Kingdom was Canada's best customer, taking \$299,361,675 worth of goods. She was, however, closely followed by the United States with produce to the value of \$293,906,184. These are, at the present time, the only two really important customers Canada has, Italy, which takes third place, purchasing only \$15,335,818 worth of goods. Following in order come Japan, Belgium, Australia, Newfoundland, France, Greece and Trinidad, which constitute Canada's ten principal trading countries. Since 1873 the United Kingdom has been Canada's best customer, always closely followed by the United States. The one exception was the year 1921, when the United States assumed first place, becoming relegated to second again the following year.

Agricultural Exports Lead

The bulk of Canadian exports have naturally always been of an agricultural nature. There are others, however, which have assumed important places and are maintaining their relative positions. Whilst agricultural exports in 1922 amounted to approximately \$52 per capita of population, those of wood, wood products and paper represented over \$20 per capita. Exports of manufactured products in 1920 amounted to \$42 per capita, and when the classification for 1922 has been made, will doubtless show some increase for that year. Taking the year 1910 for comparison, to illustrate the decade's growth in the export trade, per capita figures for that year, on the basis of the 1911 census population, were agriculture \$12, wood, wood products and paper \$4, and manufactured products \$4.

The development of the Canadian export trade has been truly remarkable, and it is the finest tribute to the wealth and variety of Canadian possessions and the constant and urgent need of the world for them that, in the consideration of the number of producers she has within her confines, she should lead the world in the volume of trade leaving her shores. Possibilities for the future are boundless. The real exploitation of Canadian resources is really only beginning. Taking the first ten countries with which Canada is trading, the eight coming after the United Kingdom and United States do not purchase annually a combined volume equal to one quarter the purchases of the two best customers of the Dominion. These countries have the same need of Canadian produce, and there is constantly occurring opportunity for developing new phases of trade with them were Canada in a position to do so. With the influx of new capital to increase the exploitation of natural resources and the development of industries, and that of people to augment the number of producers, Canada could, with little trouble, sell to these countries, and to others of the globe, a volume of goods nearer in aggregate to that taken by her two best buyers.

Canada's Trade with the Orient

Since 1886, when the Canadian Pacific sailing vessel the W. B. Flint arrived in Vancouver with a cargo of tea from the Far East, Canada's export trade with the Orient has steadily grown, until to-day it has assumed a place of no little importance. Canadian ships are constantly plying from Vancouver and Victoria to Yokohama, Hong Kong, Shanghai and other Eastern ports, carrying with them Canadian flour, wheat, lumber, metals, vegetable and animal products, and in return bringing back silks, tea, eggs and vegetable products which find a ready market in this country. This year large quantities of wheat in bulk and sacks was shipped to Japan, and, judging from the inquiries received regarding the present crops, there will be a considerable movement of this commodity during the coming year.

The Canadian Pacific Railway has probably been one of the greatest individual factors in promoting trade between Canada and the Orient. From a nucleus of three small steamers in the early '80's, the trans-Pacific fleet of the Canadian Pacific has steadily expanded, and its Empress liners of to-day are the last word in comfort and luxury. A regular passenger schedule is maintained between the larger ports of the Orient and Canada. In addition there are several Canadian, English, American and Japanese freight steamship companies which run steamers to the Orient having their Eastern terminus at Vancouver or Victoria. Steamers leave every few days, and an excellent and reliable service is provided for at all times.

Early last spring the Canadian Pacific Railway erected an exhibit of Canadian agricultural and manufactured products at the Tokio Peace Exposition. It was the centre of attraction, Japanese manufacturers being in attendance at all times inquiring as to price, quality, etc., of the goods on display. Thousands upon thousands of the Japanese public visited this booth, and it was clearly evident from the interest evinced that Japan was willing and eager to extend her trade relations with Canada.

A Permanent Canadian Exhibit at Shanghai

Following up this idea, the Canadian Government, through its Department of Trade and Commerce, has announced that arrangements have been completed to establish a permanent exhibit at Shanghai for the display of samples of Canadian manufactures and other goods. The Canadian Manufacturers' Association has endorsed the scheme and will lend it every support.

Charges for exhibition space in the building have been fixed at a low rate, with a rental of \$50 a year for six square feet, \$75 for ten square feet, and a maximum charge of \$100 a year for

any reasonable space over that area. Manufacturers entering the exhibit will be called upon to supply their own salesmen, who will be responsible to their principals.

In the twelve months ending March, 1922, Japan was Canada's fourth best customer, having purchased merchandise to the value of \$14,831,520, and being exceeded only by the United States, United Kingdom and Italy. During the same period Canada imported from Japan goods to the value of \$8,192,238, leaving a favorable trade balance of \$6,639,282. China in the year ending March 31, 1922, imported merchandise to the value of \$1,900,627, and exported to Canada goods to the value of \$1,400,552. Wood, wood products and paper accounted for the largest share of Canadian exports to Japan and China, while vegetable products and fibres, textiles and textile products constituted the major portion of imports from China and Japan respectively.

China and Japan, with a combined population of over 400,000,000, present a market of immense potentialities for Canadian products. Canada has raw materials and manufacturing and transportation facilities to compete with other countries on an equal basis for the Oriental trade, and a well-organized aggressive campaign bringing to the attention of the Chinese and Japanese importers the benefits to be derived from importing Canadian merchandise is needed. There is in force at the present time a trade agreement which allows certain privileges to Japanese goods imported into Canada. An appreciable gain in Canadian trade with the Orient should result as soon as this campaign is under way.

Dominion Ranks Amongst World Nations

Trade between Canada and the United States is vital to the prosperity of both countries, Farris R. Russell, vice-president of the National Bank of Commerce, believes. Next to the United Kingdom, Canada is the foremost foreign buyer in the markets of the United States, while imports into the United States from Canada are not exceeded in value by imports from any other country except in occasional years from Cuba.

"By the accepted tests of greatness, Canada now ranks as one of the foremost nations of the world," Mr. Russell says in the September number of the bank's magazine, *Commerce Monthly*. "It is immensely rich in natural resources. Its government is stable, its population is thrifty and energetic, and its business leadership organization of modern industry. The banking and currency system is among the best, and transportation facilities, both within the country and with other countries, are equalled in adequacy only by those of the United States."

Imports from United States

"Four-fifths of all the foreign trade of Canada is carried on with the United Kingdom and the United States. Considerably more than half of total imports

into Canada have long come from the United States, the proportion being slightly in excess of two-thirds in the last twelve-month period ending June 30, 1922.

"A clear realization of the character of the national consciousness of Canada is the first step toward an understanding of the international position and relationships of the country. Whatever the technical term which may be applied to the political status of Canada, in effect it is a proud and vigorous nation, sure of its future, rejoicing in its share in the leadership of the world, and also rejoicing in its place as an integral part of the British Empire.

"Canada is in that stage of economic development when population is small in relation to natural resources, and when exports of raw materials must pay for imported capital to develop them. In so far as Canada is a producer of raw materials which the United States does not produce in quantities sufficient for domestic consumption, this country is a heavy buyer in the Canadian market. With few notable exceptions, however, the United States is a heavy exporter of exactly those classes of raw materials and food products which make up the bulk of Canadian export trade.

"Despite the growth of manufacturers, economically speaking Canada is a new country, and the domestic industries are not able to meet its rapidly expanding requirements for manufactured goods, which constitute a large proportion of Canadian imports. At the same time, Canadian manufacturers have already proved themselves able to market successfully a wide range of products in overseas markets. This situation results primarily from the fact that the main industrial areas are south-western Quebec and south-eastern Ontario, and manufacturers there are more advantageously placed in relation to markets outside of Canada than they are in relation to many sections of the Canadian market, which can buy better in the United States, the character of demand being practically identical in the two countries."

Field for Investment

"To-day Canada is probably the most favorable field in the world for investment, comparable only with the United States in the era of its most rapid physical development, from the close of the Civil War to the opening of the present century. Although, as is the case in all new countries, capital must be sought beyond its borders, the capital accumulation of Canada is very great.

"Capital not supplied by Canadians has been secured chiefly from investors in the United Kingdom and the United States. From 1915 to 1921 Canadian governmental and corporate securities amounting to \$1,194,000,000 were floated in the United States. In addition to industrial securities and Government Bonds, some United States capital is invested in industrial undertakings not represented by securities issues, and it seems probable that the net total of United States investments in Canada must now be as much as \$1,500,000,000.

"Both Canada and the United States possess the incomparable advantages of having developed in the period of modern transportation, with the result that national-mindedness has extended the width of a continent. This is one of the secrets of their greatness, and is the basis of the outlook of their business men."

Rivals Overseas

"The two countries have identical standards of living and methods of production, and there is no material difference between their distance to the main markets. Except as affected by climate, there is no marked difference in the character of the natural resources of the two countries, or their products. In a general sense, their development has been, and will continue to be, along parallel lines, and in overseas markets they are rivals. In so far as there is trade between the two countries in products of a non-competitive character, proximity makes each the cheapest source of supply for the

other. A large part of the trade between them has its origin in the same factors as those which cause goods to move freely across the boundaries of contiguous states of the United States and provinces of Canada."

Developing Overseas Markets

The effect of the Fordney Tariff, which was awaited by Canada with a certain amount of dread and apprehension, has been in certain directions that of a blessing in disguise. In throwing Canada back upon her own feet for support it has developed greater independence in the Dominion and spurred it on to greater efforts to hold within the country the manufacture of certain products which previously went abroad. The other effect has been to divert the tide of products affected by the tariff into other channels, and Canada has sought again the overseas markets neglected for so long. It is inevitable but that produce other than the agricultural should to some extent be affected by the change.

The necessity and inclination to seek new markets, and above all to develop the British market, came at a time most opportune and auspicious. The manufacturer in the United Kingdom, after the disturbances and disorganization of the war years and their aftermath, found himself gradually getting back to more normal conditions and to a state where he could satisfy the demands which might be made upon him for products of all kinds. He was paving the way for a vigorous trade aggression in which the British Dominions were not to be neglected. He came to meet Canada halfway and sent delegations and representatives to study the markets and report on conditions and methods. This was doubly gratifying in view of Canada's desire to develop overseas markets and of the depreciated conditions of sterling which had been the depressing feature of Canadian finance for so long.

Penetrating the European Market

Canada has likewise, on her part, vigorously entered into the development of the British market, but is not confining her efforts to this, but going extensively afield. She is penetrating the European markets in a manner which suggests a development of permanent profitable trade. She has realized the wisdom of having several smaller markets, rather than depending to a large extent upon one large one, which by a sudden change of policy may seriously disrupt her business. Canada's trade with the various countries of Europe has long been a substantial and valuable one, but greater opportunities have continually been pointed out by visitors abroad, and the Dominion is now going systematically about investigating these and exploiting them.

The director of the Commercial Intelligence Service at Ottawa and the Canadian Government Trade Commissioner in Great Britain have left on a tour of Europe to investigate conditions in various countries and to stimulate their trade with Canada. Their endeavors are not to end here. It is expected that out of their investigations and decisions will result a new Canadian consular service abroad with the amalgamation of the duties of Trade Commissioner and Immigration Agent in districts or countries where the field is not large enough for either official alone. The establishment of Canadian visé centres in Europe will probably give additional facilities for the Department of Trade and Commerce and be included in the duties of the new officials.

In the month of July Canada resumed trade relations with Russia, and there is under consideration the sending of a Canadian Trade Commissioner and other representatives to Russia, and it is anticipated that the Soviet government will send a representative to Canada. This is a step towards greater trade with Europe which is expected to develop to some proportions.

Growth of Trade with Britain

In this connection it is interesting to note the growth of trade between Canada and the United Kingdom. In 1868 Canada exported goods to the value of \$17,905,808 to the United Kingdom. Ten years later this had doubled, amounting to \$35,208,031. By 1900 exports amounted to \$96,562,875, and ten years later \$139,482,945. In 1920 goods to the value of \$489,152,637 were taken by the British Isles, but by 1922, owing to a decrease in prices but also to a falling-off of trade which was purely a development of the war years, they amounted to only \$299,361,675.

Canada's imports from the United Kingdom in 1868 amounted to \$37,617,325. By 1880 these were only \$33,764,439, and by 1890 had come back to \$43,277,009. Between 1900 and 1910 they jumped from \$44,279,983 to \$95,336,427. The year 1920, due to a continuance of war-time purchasing and inflated values, showed the tremendous increase to \$213,944,814. The year 1922 exhibited a decline to \$126,362,631.

The total trade of Canada in the last fiscal year amounted to \$1,488,045,012, the sum of \$747,804,332 being accounted for by imports and \$740,240,680 by exports. Imports from the United Kingdom were \$117,134,576 and from the United States \$516,105,107. Exports to the United Kingdom were \$299,361,675 and to the United States \$293,906,643. Imports from the United Kingdom fell away by \$96,838,986 and from the United States by \$340,071,713. Exports to the United Kingdom declined by a value of \$13,483,196 and to the United States by \$248,416,324.

Industrial Outlook in Western Canada

By John Sweeting, Industrial Agent, C.P.R., Winnipeg.

Improvement in conditions is daily manifesting itself. All lines of trade are speaking well of the situation as it at present exists, pronouncing decided views on favorable future outlook and commenting on the readiness with which the West is able to stabilize. It is not difficult to understand such feelings of confidence when one considers the valuable crop grown this year, even if not from the point of view of actual returns to the grower. One cannot help realizing its meaning when seeing the tremendous number of grain freight trains passing across the prairies day by day en route to the Lake Ports. It spells huge reduction in outstanding debts; provides the means of enlarging purchasing power; puts the financial situation on a firmer foundation; causes a reaction in all lines favorable to increasing prosperity; more confident development; greater security in future operations, and an assurance that Western Canada, though at times affected adversely by World conditions, finds little difficulty in re-creating itself to the point of normal business.

Judging from reports coming in from all parts of the West, there is some justification for feeling that the winter trade conditions will be good, and that the usual unemployment situation will be less difficult to deal with, as many more men will be employed. There is at the present moment a big call for men for bush work in the lumber camps, considerably larger than has been the case during the past few years, taking care of a class of labor that has hitherto found difficulty in winter employment. There is a promise on the Pacific coast of some winter constructional work, and a good many buildings now partially erected on the prairies will require help for interior work for the next few months. The general situation in this respect is better than the average, judging from early reports.

With the upward trend of business and stabilizing of conditions, it would look as if capital can again begin to pay more attention to Western requirements, and assist in the development of resources, expansion of trade, both local and export, as well as help in taking care of requirements in the settlement of more people on the land and the marketing of their products. Marketing methods during the last few years have made rapid strides, but there are yet many signs of waste of products that can be taken care of if capital is made available for the manufacture of by-products and expansion of markets. These are important subjects affecting the West, and would appear to be of sufficient value to develop into actual commercial enterprise.

The value of construction contracts awarded in the West during the month of September amounted to \$6,856,800, being more than double the figures of 1921, while new work contemplated during the month reached a total of \$4,624,500. The price of building materials during the last few months has practically been stationary, with possibly little change during the next few months. Western projects for the next year are numerous, and expectations are that there will be a reduction in costs. However, though conditions are on a more satisfactory level, it is too early to predict to what extent there may be a reaction either upward or downward. Undoubtedly some materials have yet to reach a lower level.

The Quest of the Moose

At the time of writing, Canada is in the middle of its moose and deer hunting season, and countless sportsmen who for eleven months of the year follow a prosaic and unromantic routine, chained to office desks, caught in the trammels of modern city life, have turned their backs upon civilization, adopted the up-to-date version of primitive life, and are renewing their acquaintanceship with the Northern woods. In these short autumnal days, of sere poplar and flaming maple, they have joined again the comradeship of the camp fire; are experiencing once more that exhilaration of spirit at seeing the day break over some mighty lake; and are learning again that sheer joy in awakening in the morning with the blankets white with frost and of shiveringly washing in water that still reflects the stars of night.

It has been estimated that there are only seven thousand moose left in the entire United States. Herein lies the reason why in recent years so many big-game hunters from across the line have come up over the border and why the traffic of sportsmen from the Republic each year exhibits a substantial increment. By no means is this movement a new one. Moose hunters have been coming from the United States to favorite woods in New Brunswick, Nova Scotia and other provinces for twenty-five and thirty years. Their camps and lodges in the forest have all the appearance of permanent establishments, and residents come to look for their return every year when the mating season of the moose comes round. The Northern woods have a subtle magic all their own, and seldom relinquish their hold upon any man once they have placed their lure upon him.

Good Hunting in Every Province

There is good moose hunting in practically every province of Canada, and, roughly, about ten thousand moose are killed in the Dominion each year. Of these it should be safe to attribute one-half to visiting hunters. This seems a heavy slaughter, but far from there being any danger of exhaustion from this toll, authorities in different sections of the country are of the opinion that a killing of twice this extent might be made each year and the natural increase definitely offset any tendency to the extinction of the monarch of Canadian fauna. This knowledge is consoling in view of the greater favor with which United States hunters are regarding the Canadian forest fastnesses each year. It is gratifying to the Dominion also, who would see this traffic and its attendant revenue increasing, and learns such might be accomplished without endangering the source of supply.

In efforts to encourage the flow of visiting hunters to her forests the Dominion is coming to see the advisability of meeting the requirements of these men as far as is possible. She realizes that, for the main, these hunters are busy business and professional men who, at some trouble and sacrifice, have temporarily set aside their

manners of earning a livelihood for a much-needed holiday, and that the time they have at their disposal for a vacation is brief and limited. Generally they come to Canada with the ambition of carrying away a moose head to adorn their homes and a useful supply of meat against the winter months. The Dominion accepts it as its business to see that their objects are satisfied as much as possible. The hunters of this kind cannot give up undue time to lengthy expeditions, and by reason of their daily occupations cannot withstand the rigors and hardships such extended trips would involve.

Government Assists in Many Ways

To this end sportsmen, trappers, nature lovers and others, in various parts of Canada, have gone into the business of being hosts to this class of hunters. They have established headquarters in the woods, from which hunting parties set out, some of the more elaborate of which, in equipment and conveniences, leave little to be desired in comparison with modern hotels. These men make it their business to know the moose grounds. They are prepared to equip expeditions. They have staffs of guides available. They almost guarantee to a hunter, giving up ten days to the chase, the desired trophy to take back with him. There is no undue hardship entailed upon visitors. The guides are wonderful men. They paddle, cook and perform all the laborious tasks, and, as a final undertaking, lure the monarch of the woods from his haunts. All that is expected of the hunter, if he really wants the animal, is to shoot straight. It is hunting de luxe, the chase concentrated into a minimum of time with a maximum of comfort, which is what the average man, who is a hunter for less than a month each year, desires.

The Canadian game laws permit hunters, visiting and resident, to kill one bull moose and one buck deer (two deer in certain provinces) after the opening of the season. Cows are protected, and naturally it is not permitted to kill calves. Though the toll of the woods, at this rate, is fairly heavy at the present time, the extent of the forest fastnesses ensures their being well stocked, and Canada can witness the increase in visiting hunters to her domain each year without apprehension for some time. As long as the strict game laws enacted are rigidly enforced and forest fires rigorously guarded against, the lordly moose will maintain supremacy over his wild kingdom, safe in intelligent supervision and preservation.

Across Canada—North Bay

North Bay is the latest town in the Dominion to reach civic maturity, and is shortly to be added to the growing list of Canadian incorporated cities. It has reached this stage after long, unostentatious travel, bearing itself with a degree of modesty which might belie the intrinsic importance of the town, springing from its strategic location. Its growth is the reflection of the progress of that vast and comparatively little developed country to the north of it known as Northern Ontario, a region which has produced the world's richest silver camp, one of its wealthiest gold regions, has made a mark in paper-making, and possesses extensive tracts of fertile agricultural land. In the increasing population and enterprise of this tremendous territory, with its wealth and variety of natural resources, lies promise of yet greater things for North Bay, and investors, industrialists and others interested in the potentialities of New Ontario cannot profitably ignore its gate of entrance and logical centre of distribution.

North Bay is one gateway to Northern Ontario just over the boundary of the Provinces of Ontario and Quebec. The Temiskaming and Northern Ontario Railway, which commences at North Bay, runs as a backbone through the centre of the territory as far as Cochrane, and is now blasting its way into the James Bay area.

Another gateway lies forty-six miles east of North Bay at Mattawa, just over the boundary of the Provinces of Ontario and Quebec, where a Canadian Pacific line runs a distance of thirty-seven miles to Temiskaming, from which point a steamer connects with towns at the head of Lake Temiskaming. From Temiskaming a new line is under construction to Les Quinze, a further distance of seventy miles.

Railways radiate from the new city north, south, east and west, two of them main trans-continental lines. Through North Bay, on its way to Eastern and Western Canada and the United States, passes the great wealth of Northern Ontario, its gold, silver and lumber, its manufactured pulp and paper. Through it passes the manufactured needs of the many camps and the thriving small towns which serve the working areas.

Industrially a Progressive City

North Bay is a compact little city situated on Lake Nipissing within convenient distances of Montreal, Toronto and Ottawa. It is furnished with excellent educational establishments, banks, newspapers, public buildings, hospitals and other civic institutions. The city is well laid out with fine residential districts and is surrounded by numerous summer resorts within commuting distance.

Industrially North Bay is making steady and rapid progress. Between the years 1917 and 1919 the number of its larger industrial establishments increased from 37 to 52; the capital invested in them from \$828,020 to \$937,357; the number of employees engaged from 691 to 970; their wages from \$651,112 to \$1,153,602; and the production of the plants from \$1,651,966 to \$2,381,027. The city has two planing mills, two sawmills, a brick plant, box factory, car repair shops, machine shops, furniture factory and numerous wholesale houses. The wealth of raw material in the district and in all Northern Ontario makes attractive the possibility of establishing new industries there.

At the present time, however, North Bay's distinctive importance lies in its strategic position as the distributing point for the extensive area north of it stretching from the main line of the Canadian Pacific Railway right up to James Bay. This is a tremendous region given over almost entirely to the exploitation of natural resources and requiring to be continually supplied with manufactured necessities. These must pass into the country through these

gateways, and manufacturers and wholesale houses are coming to an increasing extent to realize this.

Northern Ontario is an expansive area which is only commencing to reveal the immensity and diversity of its wealth, and fresh disclosures are of so rapid an occurrence that even the most expert engineers hesitate to put limits to what lies latent beneath its soil. North Bay has already achieved considerable development as this area's point of contact with the outside industrial world, and its prestige must considerably enhance with the great future foreshadowed for New Ontario.

Canada's Climate Again

With the shortening fall days and the approach of winter months, once again arises in foreign publications arguments and opinions as to the desirability or disadvantages of Canada's climate.

We who live in Canada are quite satisfied with our winter climate; we know it is both desirable and advantageous, and that without it we could not hope to raise the finest hard wheat in the world and the splendid crop of sturdy, healthy, young men and women. Farmers know that bracing cold weather puts bone and muscle, fat and hide on horses and cattle; lumbermen and trappers that snow solves their transportation problem; while to the lover of outdoor sports, winter time in Canada is a season to be anticipated. Finally, vital statistics bear out the fact that nowhere in the world will a healthier class of children be found than in Canada, and the state of health of the younger generations is the very best indication of the advantages of the climate.

In a very eulogistic article on Canada in the October issue of the *International Bulletin* published by the International Institute of Economics of New York, one of Canada's great drawbacks is stated to be the climate. "Cosmopolis," who writes the article, says:

"Canada's chief disadvantage is that her farther northern climate renders her products less diversified than America's—by which he means, of course, the United States—and grips great areas in frosts that forever forbid cultivation of them."

On the face of it, this would seem to be fact, but it would be difficult to convince Stefansson and other recent Northern explorers of this fact. "Forever" as applied to cultivation and living conditions in Canada is a doubtful word, for, as time goes on, conditions in Canada change, and with further northward cultivation and colonization the so-called Arctic climate is being driven farther North. To any who have read Stefansson's article on climate in the February, 1922, *World's Work*, 'The Livable North,' the following quotation will be familiar; to those who have not read it, it will be of interest.

Before quoting from that article, however, let us just point out that this question of excessive Arctic climate and unproductive Northern areas is fast losing its foundation. Settlement in the Peace River country, in Northern Ontario and in Quebec is going on apace, and areas that, like the Northwest, were once considered uninhabitable and uncultivable, are now proving desirable and productive. Back in the early nineties, wheat grown a thousand miles north of the international boundary took first prize at the Chicago International Exhibition, since when settlement in that area has been steady and expansive. When Canada is possessed of a population of eighteen millions instead of eight as at present, this question of uncultivable Northern areas owing to excessive climate, will have faded just in the same way as the question of the fertility and livableness of the Northwest faded with time and experimentation. But let Stefansson speak for himself:—

"We have pointed out that the growth of grass and other plants is measured not by the length of the summer in months, but by the number of hours of sunlight, and that there are as many hours of sunlight in three months of Arctic summer as in six months of tropic summer, giving the plants, therefore, in reality, twice as long a growing time as the careless reasoner assumes them to have. This is one of the fundamental considerations which explain the universality and luxuriance of vegetation in the North that is always so startling to the traveller who goes North with a mind furnished with ideas derived from school geographies."

"It seems to be light rather than heat that makes a plant grow fast. But if it were heat, the polar plants would not be badly off. A fairly simple mathematical calculation shows that from the first week of June to the second week of July, the earth at sea level receives from the sun more heat per square mile per day at the North Pole than at the Equator. In mountainous regions, such as Greenland, there is left over from winter, stored snow to counterbalance locally this tremendous downpour of heat; but on the far more extensive polar low-lands of Siberia, Canada, Alaska and the Canadian Arctic islands, there is no stored-up snow to temper the summer heat, which explains the stories travellers from these regions tell of the unbearable swelter of the Arctic summer and explains such weather bureau records as 100 degrees in the shade at Fort Yukon, Alaska."

Examples of Unconscious Humor

"The speeches in Parliament of Sir Edward Blake and others are now classic in Canada and are there the best known examples of unconscious humor. The English language was taxed to its capacity in showing the absurdity of the building of the Canadian Pacific Railway. The argument said in substance that the expense of building the road would be so great that, even were we to accept the most optimistic view of what the resources of the Prairie Provinces might develop into, even so a reasonable freight tariff for carrying them to the Atlantic would never pay for the axle grease of the freight cars. Opponents of the road were willing to concede that if anybody had the incredible folly to squander that much money the road could be built. They admitted further, that it could undoubtedly be operated in summer, but submitted that it was preposterous to suppose that it could be operated in winter, and there followed the self-evident conclusion that the railway could never be profitable, for 'no enterprise can be profitable if it is operated only half the year.'"

"It is hard now to realize that this argument was applied in good faith to the district which is now, with some justice, called 'The Bread Basket of the World,' and to a railway which is commonly conceded to be the greatest of all railway systems.

"Human energy, mental and physical, is developed to the highest degree in the Northern climates. It may also, in some cases, be developed to a high degree in Southern countries, notably on plateaus and where the sea breezes blow freshly. We need not go into any such elaborate arguments as those of Ellsworth Huntington's book 'Climate and Civilization' to prove to any thoughtful man that so long as we have a competitive civilization and so long as public opinion continues to allow the energetic and the powerful to take whatever they wish from the lethargic and the weak, so long will the North continue to dominate the South as it is doing to-day, for it produces the one crop that matters—men of unsleeping energy and restless ambition."

Ontario Farm Cadets

Juvenile immigration to Canada during the past few years has slowly regained some of its pre-war importance, and each steamer arriving from the Old Country brings a number of these sturdy, future citizens. At the present time there are many hundreds of thousands of 'teen-age boys in England who are out of school and unable to get work owing to the prevailing industrial conditions, and the Ontario Government has under consideration a scheme for the bringing of some of these boys to Canada and placing them with farmers throughout Ontario, which, if put into operation, will not only relieve the congestion in England, but bring to this province a considerable number of children who possess great possibilities of assimilation and citizen-making.

The scheme as proposed is that an organization be formed to be known as the Ontario Farm Cadets, which would recruit boys who wanted to emigrate for a period of four years. The lads would be divided into units of ten or twenty, and would be sent to Canada in charge of a "cadet master," who in turn would hand them over to "headquarters," which would be established at some convenient point in the province. "Headquarters," in reality a clearing-station, would distribute the boys for a term of two years to farmers, who would undertake to clothe and feed them, as well as give them a good, sound training in Canadian farming methods. At the end of that time, if the cadet so desired, the Government would assist him in acquiring a farm of his own.

Valuable and Desirable Citizens

For some years the Dr. Barnardo Homes have been active in sending juvenile immigrants of the highest type to Canada, and to date some 26,500 have entered the Dominion from the Old Country under their auspices. Their plans for the distribution of the children upon arrival in Canada are much the same as outlined above,

only, of course, they do not give assistance to the youth in acquiring farms. In a great many instances these Barnardo boys, after gaining farming experience, take up homesteads in the newer settled parts of the Dominion, where they have been very successful. It has been estimated that Dr. Barnardo's boys and girls who have already been sent to this country have been worth \$5,000 each, or a total of over \$125,000,000. They have developed into splendid citizens, and during the Great War some 6,200 Barnardo boys enlisted in the Canadian Expeditionary Force, of whom 531 made the supreme sacrifice.

In 1900-01 juveniles to the number of 977 entered Canada, although there were applications from children in England who wanted to emigrate to this country totalling 5,783. This number increased to 3,264 in 1905-06, but steadily declined until 1913-14, when the number who entered the Dominion only totalled 1,799. However, during this fourteen-year period applications received by the various agencies in England steadily rose from 5,783 to 30,854. The war naturally put a stop to further emigration, but since the Armistice migration has resumed, and during 1921 approximately 1,000 juveniles entered the country. The care with which these children are selected has prevented wholesale emigration from England, and Canada received only the very best of those offered.

Many of these children come from good families of the working class in England, who, living in depressing and undesirable conditions, have had little or no opportunity to develop. In Canada there is a pressing need for immigration, and many farmers in the Dominion would be glad to take one or more of these children to bring up and train as farmers. If the youth does not wish to take up farming as a vocation, there are other industries he may learn. In fact, the field is illimitable. Some have found their way to legislative halls, some are in the ministry, some are farmers—in fact, these youths are to be found in every walk of life in the Dominion. The progress of Ontario's scheme will be watched with interest.

Ontario Mining Prospects Good

Increased mining activity in Northern Ontario during the first six months of 1922 is clearly indicated in the report of the Ontario Department of Mines, which has just been issued covering that period. During the first half of the year the value of mineral production was \$14,448,312. Gold, of course, accounted for the major portion of this sum, and, judging from the results produced in the period under review, production for the whole of 1922 should exceed \$20,000,000, which compares very favorably with a total production value of \$14,624,085 in 1921. Silver production also shows an increase over the corresponding period in 1921.

The following is a summary of the metalliferous production for the first half of 1922: gold, ounces, 476,338; silver, fine, ounces, 4,774,666; platinum metals, ounces, 151; copper sulphate, pounds, 22,553; copper metallic, pounds, 495,899; copper in matte, exp. tons, 505; nickel in matte, exp. tons, 425; iron ore, tons, 1,004; iron, pig, tons, 10,517; iron arsenate, pounds, 75,000; cobalt metallic, pounds, 2,411; cobalt oxide, pounds, 153,510; nickel oxide, pounds, 437,258; nickel cobalt oxides, unseparated, pounds, 647,254; nickel metallic, pounds, 102,200; other nickel compounds, 27,270; lead, pig, pounds, 1,993,880.

Gold and Silver Output

The value of silver and gold secured from the mining areas of Northern Ontario during the past quarter of a century is enormous. In the Cobalt area alone there has been produced since 1903, 300,000,000 ounces of silver, valued in the neighborhood of \$200,000,000. Since 1887 approximately 17,000,000 tons of copper nickel have been smelted in the Sudbury district, delivering 433,831 tons of nickel and 254,104 tons of copper. In the past decade the Northern Ontario fields have produced more than 4,000,000 ounces of gold, valued at above \$73,500,000. The Hollinger Mine in 1921 produced gold to the value of \$10,114,719, as compared with a total production for the province of \$16,322,629, and in view of the labor troubles in the Rand, South Africa, it bids fair to become the premier gold-producing mine of the world in 1922.

Exploitation of the mining areas has proceeded steadily ever since the discovery of nickel in 1887 and silver in 1903, and during the past couple of years has taken on the appearance of a fair-sized boom. New capital is flowing in from all parts of the world. Gold mining especially has taken a spurt, numerous companies having entered the field in recent years. Drilling operations are now in progress in several new mines, and prospects are favorable for their entry into the shipping list during the next few months and consequently enhancing the value of gold production in Ontario.

Ore Testing and Research Laboratories

A great deal of the mineral development of Canada is promoted and effected by individuals or companies so limited as to personnel and capital as to debar any elaborate outlay in preliminary investigation work and initial machinery. It is largely with a thought to these that the Mines Branch, Department of Mines, maintains at Ottawa modern and well-equipped laboratories for experimental test and research work on the dressing and metallurgical treatment of Canadian ores and minerals. The purpose is to render assistance to the mineral industry generally, and to promote its advancement by providing laboratories in which experimental work can be carried on, and in which research on special problems connected with the milling, concentration, separation and metallurgical treatment of Canadian ores can be conducted.

Though the laboratories are of special value to the prospector, the small mine operator or company, their work is equally beneficial to the large commercial enterprise, and, in fact, to all connected with the Canadian mineral industry. The prospector can have his samples identified and, providing he has a promising occurrence of valuable mineral, can, upon application, have simple test work performed to determine the most feasible methods of treatment. The small mine owner can have more extensive laboratory investigation and research conducted to determine a commercial metallurgical process, from which he will receive valuable information and data for the erection of a treatment plant. Large commercial enterprises and established concerns can have experimental test and research work conducted on problems connected with the metallurgical treatment of their ore.

Investigation of National Moment

In addition to this work of purely individual importance, investigations of national moment, common to certain phases or parts of the mineral industry, or a particular district, can be carried on, the results of which will contribute materially to the advancement of the industry. The information contained in the reports of the investigations and experimental test work will, in their published form, naturally be of considerable interest and of a high value to all those connected with the mineral industry.

The experimental tests conducted in the ore dressing and research laboratories can be divided into main classes, small scale and preliminary investigation tests, and large scale or tonnage check tests. Small scale tests are made on shipments of 100 pounds to 2,000 pounds to determine the process most applicable to the ore in question. Specimens of the ore are examined as to physical characteristics and, if found necessary, polished, and thin sections are prepared and a thorough examination made under the microscope. A series of tests is made on samples of the ore, which are subjected to any or all of the established processes that could be considered applicable. The more feasible methods having been determined, complete tests are conducted covering all phases of treatment. Large scale tests are conducted after the small scale tests have determined the processes most applicable to the ore or product under investigation. They are made to establish the physical behavior of the ore or product under conditions more nearly approaching to practice and to verify the results of the preliminary tests on a larger scale under such conditions. Lots of one ton or a carload are used for these tests. Operating tests are sometimes conducted in co-operation with the mining companies, who make provision for the use of an operating mill which is run over a period of time. These tests are conclusive as to the practicability of any process.

Laboratory tests on Canadian ores are made free of charge subject only to a few simple conditions. All samples must be bagged and delivered to the laboratories free of all transportation and unloading charges. For small scale tests not less than 100 pounds will be accepted and for large scale tests not less than one ton. All testing products become the property of the Mines Branch.

Salmon Pack of 1922

After a number of "light" years and depressing market conditions the salmon industry of British Columbia promises to come back strong this year and cannery men are optimistic regarding the market outlook. Prospects for a good salmon catch this year are excellent, and according to reliable reports the catch will total about 700,000 cases, with several districts still to hear from, which is an increase of nearly 100,000 cases as compared with the previous year, when the total pack amounted to 602,000 cases. There has been a slight im-

provement in the quality of sockeye fish packed this season, providing about 250,000 cases as against 163,000 last year. The pack this year is made up of the following grades and quantities: sockeyes, 248,541; red spring, 31,850; white spring, 3,515; blue backs, 3,629; cohoes, 20,886; pinks, 359,459; chums, 23,346; steel-heads, 651.

The growth of the Pacific Coast salmon canning industry has been remarkable, and is typical of the growth of many of the industries of the West. In 1865 there was only one cannery in operation in British Columbia, with an annual pack amounting to 2,000 cases. To-day there are over 300 establishments canning salmon in the province, with an annual capacity of well over 1,000,000 cases. Buildings and equipment are the best that can be bought, and represent an investment of \$50,000,000. The value of production of these plants has touched \$100,000,000, and employment is given directly or indirectly to a large number of people.

The Fraser River Industry

The sockeye salmon fishery of the Fraser River, which now provides the major portion of the catch, was famous the world over for the enormous quantities of fish that were caught there, but in recent years the careless and inefficient methods of some of the packers has nearly destroyed the veritable gold mine. During the period 1897 to 1913 inclusive, the Fraser River system produced more sockeye salmon than any other known river system, amounting to a pack of 11,007,125 cases, or a catch of 132,085,450 fish. It is a peculiar characteristic of this river that every fourth year the fishermen experience a phenomenal run of sockeye, but since 1901 the catch has gradually grown less and in 1921 the pack was below the average.

In order to offset the heavy toll exacted each year from the Fraser and other salmon grounds in the province, the Federal Government established a fish hatchery at Bon Accord in 1885 for the propagation of sockeye. Between 1900 and 1907 five more hatcheries were built on the Fraser River, having a capacity of one hundred and ten million eggs, and since then two auxiliary stations have been completed. These hatcheries have done excellent work, but have been handicapped owing to their inability to collect a sufficient number of eggs, the hatcheries on the Fraser having never been filled beyond thirty per cent. of their capacity since 1905.

During the War the salmon canneries were working to capacity, and there was a ready market for all they could produce. However, at the termination of hostilities the market took a slump, which, together with the decrease in the annual catch, worked hardships on the

industry. For a time the industry was in a more or less stagnant position, with warehouses packed with salmon and a limited market. At this time the Alaskan and Japanese canners were providing keen competition and the British Columbia canners found it difficult to dispose of their better grades. An active campaign in the British Isles advocating the more extensive use of British Columbia salmon has been productive of results, and judging from reports the marketing of the pack this year will be satisfactorily accomplished. The movement of the new pack to consuming markets this year commenced early, some 75,000 cases having been shipped up to the end of August, with space engagements heavy for the ensuing two months.

An Immigration Conference

A conference of some moment and fraught with considerable significance to Canada's immediate future recently sat at Ottawa. There the important transportation interests of Canada, rail and steamship, met with the immigration officials of the Dominion Government to request changes in the immigration system and regulations which would permit of a greater flow to Canada of those peoples which had from long establishment in Canada proven their desirability for Dominion citizenship. They urged the promotion of a wide and aggressive campaign of advertising and publicity on the part of the Government to disabuse the minds of these people and eradicate the opinion, which inaction has engendered in the past few years in certain directions, that Canada no longer desired immigrants and no longer offered the opportunities to newcomers she once did.

The conference comes as the climax to what is practically the concerted voice of the Canadian people; it is the final assault coming on top of a series of individual batterings. Patriotic societies have demanded legislation which would enable Canada to share to a greater extent in the human tide leaving Britain's shores. Boards of Trade, national and political clubs and organizations of all kinds have in no unmistakable terms expressed themselves as desiring re-enactment of the immigration laws to enable Canada to secure greater population. Members of Parliament have expressed personal and unofficial views divergent from those of the Government, and private individuals have deluged the press with their definitely thought-out convictions that immigration was the only solution to Canada's pressing problems. The last note in this voice of popular sentiment came from the Canadian Trades and Labor Congress, which passed a resolution asking broadly for a greater supply of new labor in Canada.

What is Wanted

What the transportation interests of Canada have asked is a virtual resumption of the old system of immigration which has prevailed for so long and which is universally recognized as having brought results prior to the war. They ask for an immediate campaign of wide propaganda on the part of the Government, from whom it should rightly originate, to present Canadian opportunity to those considering immigration. They ask for the careful consideration of the Empire Settlement Scheme whereby \$15,000,000 is made available annually by the Imperial Government for settlement purposes to the Dominions furnishing like amounts. They ask for the revision of the continuous passage clause so as to permit the entry of desirable colonists from selected countries irrespective of where they start their journey

to Canada. They advise more liberal regulations for the admission of colonists coming to Canada upon prepaid tickets furnished by friends or relatives, and that greater consideration be given certain European countries desiring financial aid for their nationals who desire to emigrate to the Dominion. Among other matters strongly urged is that of the utilization of the Dominion experimental farms for the training of young men and women from the British Isles and their subsequent financial aid in becoming agriculturists, as well as the widest possible extension of child immigration.

Canada, at the conclusion of the war, was led to believe she would receive a tremendous volume of immigration, which was only shut off by her policy of discouragement and definite-limiting legislation. Transportation interests had provided greatly increased equipment for this traffic which never materialized, much of which is necessarily idle. Figures of immigration since the war, due to the effects of Canadian policy and the aggressive methods of other Dominions, have gradually declined, so that the year 1922 is exhibiting very considerable depression.

Real Need of More People

Apart from this, however, immigration is the prime national need, and as such is realized by all the leaders of thought and action in the country. Even in Canada's present status the population is not always adequate to the work undertaken. In the fall months of the year, due to the harvest draining of the East by the West, an artificial labor shortage was created, and labor for certain industries could not be furnished in adequate volume. From all indications Canada is to experience in 1923 an era of unprecedented industrial expansion due to the extensive establishment of foreign houses, and there is serious danger of shortage of industrial labor, having no regard to the millions of acres of uncultivated land and their almost limitless powers of assimilability.

It is purely a question of policy whether Canada is to receive adequate immigration or not. The kind of immigrants the Dominion has received in the past, who have proved most admirable colonists in every respect, and developed the country to its present status, are available and desirous of further establishment. In a manner they are forcing Canada's hand and coming to the country without invitation, in the face of stern discouragement. The Italian and Dutch Governments are desirous of settling part of their superfluous population in Canada, and have had representatives in Canada scouting out the ground, and with only slight co-operation the Dominion can expect great benefits from such assistance. Although other countries are making strenuous efforts to get them, Norwegians and Danes still prefer Canada. The Dominion is receiving a substantial proportion of the young army officers recently demobilized in India. All summer parties of agriculturists have been personally conducted by the transportation companies and selected groups brought in by benevolent societies. In a policy of discouragement immigrants will come; what would the result be if they were encouraged?

Hope for 1923

There is every reason to suppose that this latest move will have the effect of bringing about drastic changes in the present immigration system and stimulating a campaign of publicity on the Dominion's part, the combined effect of which will be to turn to Canada's shores a volume of immigration more akin to that it was accustomed to welcome before the war. The voice of the Canadian people is behind the appeal, and there no longer remains any doubt but that Canadians as a whole are desirous of adding to their population immediately and welcoming new-comers to share their prosperity and bring about a development of their country more adequate to what its extent and wealth justify. Whilst the year 1922 cannot but be regarded with the most intense disappointment, much better things are hoped for in 1923.

Motion Picture Films

A print of each of the following films issued by this department is deposited with the representatives listed below. These are available upon application for use by schools, theatres, clubs, societies, boards of trade, and other associations and organizations.

Homemaking by Irrigation.—Irrigation farming in Southern Alberta, the various operations and their results.

The Land of Promise.—Featuring the well-known agricultural section of Battleford, Saskatchewan.

Opportunity.—Illustrative of Western Canadian opportunity, more specifically in the district of Lloydminster, Alta.

Livestock and Dairying.—The fine status and remarkable progress of this industry in Western Canada picturized.

Taming the Last West.—Depicting the evolution of the Canadian West from buffalo range to a modern agricultural area.

The Sunny Side of Rural Life.—The farmer on holiday, showing that life in Western Canada is not all work.

The Evolution of a Grain of Wheat.—The life of wheat seed from the time it is sown until its progeny enters into the composition of a loaf of bread.

Apple Growing in Evangeline's Land.—Orchard cult in the region Longfellow's poem made famous.

The Apple Harvest of the Okanagan.—Gathering and shipping apples in the beautiful British Columbia valley.

Curing Fish in Nova Scotia.—Depicting the various phases of curing and smoking fish in the Maritimes.

The Canadian Sardine.—The sardine caught, canned and distributed.

Some Water Powers of Eastern Canada.—The beautiful and powerful waterpowers of the Eastern Canadian provinces.

The Silver Fox Industry of Canada.—The domestic ranching of silver foxes in Prince Edward Island.

New Homes Within the Empire.—The camera follows the progress of a British immigrant from the first awakened interest in Canada till when he settles on a Western farm.

Trail—the Metallurgical Mecca of Canada.—Work at the Sullivan Mine and the operations of the plant of the Consolidated Mining and Smelting Company at Trail, British Columbia.

Departmental Publications

Any of the following publications will be sent free on request.

The Prairie Provinces of Canada.—A descriptive statistical booklet on the provinces of Alberta, Saskatchewan and Manitoba, with full information on the opportunities for farming in the West.

Business and Industrial Opportunities in Western Canada.—Full listings of industries existing and business openings in the provinces of Western Ontario, Manitoba, Saskatchewan, Alberta and British Columbia.

Why Canada.—Reliable and comprehensive information for the United States manufacturer, showing the advantages of establishing his industry in Canada.

Canada's System of Government.—Canadian government briefly outlined to portray its democratic traits.

The Story of Canadian Nickel.—History of the nickel mining industry.

Canadian Oil Exploitation and Prospects.—An expert engineer's history of Canadian oil development and future possibilities.

Canadian Water Power Development.—Authoritative and exhaustive survey of water power reserves and possible development.

Irrigation in Western Canada.—A comprehensive survey of irrigation in the West from the initiation of the first project to the extensive developments of the present day.

Education in Canada.—The wide scope of Canadian education depicted to show that a settler need have no apprehension in this regard.

A Canadian Grain Handling Plant.—How Canadian grain is stored and shipped. Authoritative article on Canadian elevators.

Value of a Settler to Canadian Railroads.—Computation from reliable statistics of a farming settler's revenue-producing worth to Canadian railroads.

Bituminous Sands of the Athabasca Region.—Description with known values, and possibilities of development of the widely known tar sands of Northern Alberta.

Water Powers of the Maritimes.—Authoritative article on the undeveloped power systems of the Eastern provinces dealt with exhaustively.

Oleomargarine.—History of oleomargarine in Canada and its future prospects.

Synopses of Natural Resources.—Pamphlets dealing briefly but concisely with Kaolin or China Clay, Oil Shales, Mica, Fluor-spar, Asbestos, Molybdenum, Magnesite, Fruit, Flax Fibre, Nickel, Coal, Clays, Salt, Copper, Zinc, Silver, Gold, Pyrites, Iron, Potash, Talc, Feldspar, Platinum, Phosphate (apatite) Manganese, Graphite, Cement, Barytes, Gypsum, Petroleum and Natural Gas, Corundum, Sulphates of Sodium and Magnesium, Fur, Fish, Peat, Mineral Waters, Building and Ornamental Stone, Flour Milling and Water Powers.

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Herbert Greenfield-Premier of Alberta Still Owns the Canadian Farm Which Gave Him His Start

HERBERT GREENFIELD, Premier of Alberta, was born in Winchester, England, in 1869. There's nothing remarkable in his early history—just an average, bright, healthy boy with a good father and mother. There is no record of awe-inspiring, childhood genius nor can he remember being fired by any overpowering ambition.

At the age of twenty-three he decided to try his luck in Canada and hired out as a farm hand in Ontario. When he thought he had acquired sufficient capital and experience, Horace Greeley's advice to young men occurred to him: reading literature on the subject, he was enthralled with the glamour of the West and immediately filed on a homestead at Westlock, Alberta, north of Edmonton. There he settled down to hew his fortune out of Western land. It took courage and enterprise, but he had both, for he had had experience. From time to time, he increased his holding till it grew to some 600 acres. He both practised and preached mixed farming.

Then responsibilities, which have a way of falling on the shoulders of those best fitted for them, made a track to his door. He welcomed and entertained them. For five years he guided the destinies of the Local Municipal Council, and was for several years President of Provincial Association of Municipal Districts, finally graduating into a leader of the United Farmers' organization. When that party won the provincial elections in 1921, he was appointed its leader in the legislature, and being called by the Crown to form a government, became Premier—the highest political honor the province has to bestow.

Department of Colonization and Development
Canadian Pacific Railway
 J.S. Dennis - Chief Commissioner.





Agricultural and Industrial Progress in Canada

A monthly review of Agricultural and Industrial progress in Canada, published by the Department of Colonization and Development of the Canadian Pacific Railway at Montreal, Canada.

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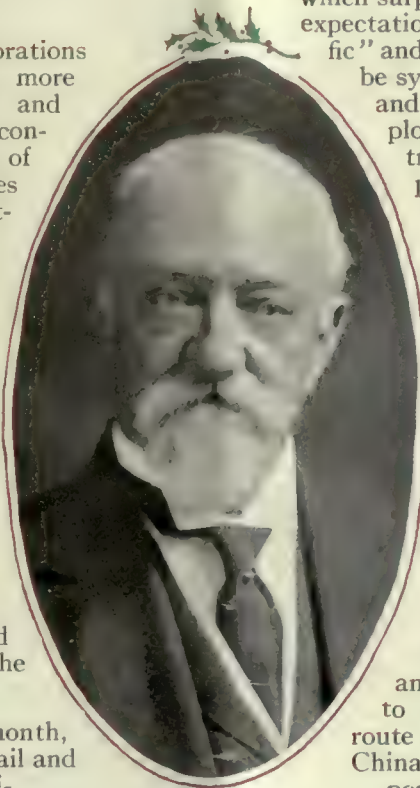
December, 1922

Service First

GREAT firms and corporations are coming to realize, more and more, the value and necessity of periodical conferences; the bringing together of their officials and representatives at round-table talks where matters of common interest and policy can be freely discussed and planned. In a corporation such as the Canadian Pacific, some of whose officials, owing to location at extreme distances do not often meet, the worth of such conferences is unquestionable. The methods of salesmanship and advertising for instance, of the man in California may be totally different to those of the man in Nova Scotia, and yet each doubtless has one or more successful plans which are unknown to, and could be advantageously adopted by, the other.

Such a conference was, last month, held by the Canadian Pacific Rail and Steamship representatives in Chicago. From Seattle to Boston, from Vancouver to Halifax, from Edmonton in the north to Los Angeles and New Orleans in the south, these men came together, and it is interesting to note that of all subjects under discussion that of service received the greatest consideration.

These are the days when service is paramount in every aggressive business organization, not only service that is a duty and expected, but that



MR. I. G. OGDEN,

Vice-President, The Canadian Pacific Railway Co.

It is my sincere wish that the New Year may be one of prosperity and happiness to you, and we should all use our best efforts to aid to this end.

which surpasses it—that which is beyond expectation. The words “Canadian Pacific” and “Service” are, by many, held to be synonymous and the latter is part and parcel of every C.P.R. employee’s creed; on steamships, on trains, in hotels, dining cars, express and telegraph offices, service is a matter of course, but the kind of service the Company is now desirous that the men on the firing line should better render the inquiring public is that of reliable and complete information regarding the commercial, industrial and agricultural progress of the Dominion of Canada.

The reason for this is the increasing interest in Canadian affairs that is being manifested by the great American Republic to the south of us, an interest which, during the past summer, has sent thousands of United States’ travellers to Europe via the St. Lawrence route and further thousands to Japan, China and the Orient via the Pacific port of Vancouver, not to mention the countless hundreds whose summer vacations were spent in the Canadian Pacific Rockies and other parts of the Dominion.

Tourists and travellers, these days, are all “from Missouri.” They are not content just to know where they are going and when they will arrive; they desire, before starting, to possess information regarding many things which before they did not trouble about. They want

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Norman S. Rankin, *Editor of Publications.*

E. L. Chicanot, *Asst. Editor.*

to know why Canada is such a great country? Why the dollar is back to par? Why so many U.S. firms are opening branch plants and factories within our confines? What our railroads are earning or losing? What the values of our exports and imports are, and what are the economic conditions in this or that particular district?

These are to them pertinent questions, and, depending on the answers they receive, they may or may not visit the Dominion; may or may not become investors in its future. The Canadian Pacific Railway is as deeply interested in supplying reliable answers to these many questions as it is interested in the prosperity of the Dominion, and to this end, for some time, has been endeavoring to educate its representatives along these lines.

It trusts that all inquirers may receive prompt, full and satisfactory replies to their questions and asserts its desire of better service not only in this respect but also in transportation and other allied services.

The Crop Situation

By J. Dougall and T. S. Acheson, General Agricultural Agents, C.P.R., Eastern and Western Lines

The month of November has closed, terminating one of the best harvest seasons that can be remembered in Canada. Weather conditions have been ideal throughout the Dominion, with the result that threshing outturns are showing wheat and other grains of very high grade. The Canadian railways have also been able to handle very large tonnages, and this, with the fairly satisfactory prices obtainable, is having a very good effect on business conditions, especially throughout the Western provinces.

There has been some slight tie-up at the Lake ports through congestion, but the Canadian crop has been in no wise affected. Canadian transportation companies are, in fact, to be congratulated on the way they have handled the 1922 crop. So far no difficulty has been encountered in finding a market for a crop of so high a grade.

British Columbia.—The apple crop has been satisfactory but some difficulty has presented itself in the marketing. Western grain farmers, who are large buyers, have not been buying this year to the usual extent. The export market is fairly satisfactory.

Alberta.—1922 has again put Alberta on its feet, and whilst it is true that a portion of the northern area of the province suffered from a lack of rainfall, Alberta has produced one of the best crops in history. Fall ploughing has been carried on without cessation, and this, with an average acreage of summerfallow, should give a good acreage for 1923. Business conditions are showing improvement in every phase.

Saskatchewan.—Operations have continued under excellent conditions all fall. A few days were lost due to snowfall but no damage was inflicted on the crop. Farmers seem to be generally satisfied with prices received and are

marketing their crops as fast as transportation conditions permit. Summerfallow and fall ploughing are up to, and possibly in excess of, the average year.

Manitoba.—The season 1922 sees Manitoba once more with a bumper crop, and it may be said to be one hundred per cent clean. Weather conditions have been all that could be hoped. Prices have been fair and business conditions are improving rapidly. Summerfallow and fall ploughing, as in the other Western provinces, are well up to the average.

Ontario.—As previously reported, conditions in this province are good, and general satisfaction prevails in agricultural circles. The results of the year's operations in the Niagara fruit district and other apple-growing sectors are decidedly satisfactory. Good markets were found for crops and the province secured premier honors at the Imperial Fruit Show in London, England.

Quebec.—The 1922 season closed with general satisfaction in this province. Weather conditions have been excellent and the pastures are in good condition still, which is resulting in a saving to farmers of winter feed. So far no frost has been experienced except in the Lower St. Lawrence, which is very unusual. This is permitting farmers to hold their cattle longer.

Maritime Provinces.—Conditions are satisfactory as to yields although New Brunswick produced a much smaller crop than was anticipated, due to heavy rains. The Annapolis Valley produced a very clean crop of apples and found a ready market. The product of the valley secured high honors at the Imperial Fruit Show. The price situation as applied to potatoes is not satisfactory, and growers are experiencing some difficulty in disposing of their crops profitably.

Livestock.—The livestock situation in Canada on the whole is rather disappointing. The prices obtainable for cattle throughout the Dominion have not been encouraging to producers, though fair prices are being obtained for the best class of butcher animals. All others are bringing very low prices. The lamb trade has been good and prices have kept on a fairly high level throughout the season. Hog prices are high for good type bacon hogs, and, generally speaking, the market is satisfactory, but suffering from shortage.

Christmas Industries

For the main part the season which immediately surrounds Christmas-time is a slack one for the followers of Canada's first industry. In the Dominion's short growing season almost ceaseless activity prevails from the opening of spring operations until the threshing of the crop is completed. With the harvested crop marketed, however, a period of comparative leisure ensues, the actual amount of labor entailed being gauged by the amount of livestock the farmer is carrying over the winter. Generally speaking, from November on, Canadian agriculturalists calmly pursue a tranquil way until dawning spring carries away winter's snows in roaring freshets and the same diversified round of almost uninterrupted activity occupies them in the production of another crop.

Canada has, however, developed, and is still developing certain seasonal activities which from their nature might be termed Christmas industries. They are instrumental in furnishing the necessities of the Christmas season in many sections of the continent and adding to the holiday's festivities in countless homes. Families

who know Canada merely as the name of an expansive country existing to the north of them have the products of the Dominion on their dinner tables. The virgin woods of Canada provide the arboreal decorations peculiarly associated with the day.

The supplying of turkeys and other poultry to the United States market has developed in Canada into a Christmas industry of some proportions. For years the Maritime Provinces have supplied Boston, New York and other large centres. This industry has become an important one in the Western Provinces, and Alberta especially sends large supplies at Christmas-time down across the border. The Egg and Poultry branch of the Alberta Department of Agriculture last year marketed in all 40,000 pounds of turkeys, 20,000 pounds of which went to the markets of Minneapolis and St. Paul.

Fat Turkeys and Christmas Trees

These turkeys were raised in all parts of the province and other large supplies were marketed individually. The Brooks irrigated district in Southern Alberta, which has made a name for itself in such a wide diversity of agricultural products, killed 43,000 pounds of turkeys at eight centres last year and marketed them co-operatively, the larger portion going to the United States. The same industry has been found profitable as far north as the Grande Prairie region of the Peace River country, and a farmer in that section last December shipped more than 70,000 pounds of turkeys, whilst shipments of the Grain Growers'-Cooperative Association from the same country exceeded this.

The Christmas-tree industry of Canada is a comparatively insignificant one judged from the standpoint of revenue but sentimentally, for a brief period each year, it is one of transcendent importance. The lavish exploitation and depletion of United States forests for economic purposes has left scant growth for festive occasions and in the demand for the little spruce at Christmas time the vast Canadian forests are called upon for substantial supplies.

For weeks before Christmas the woodsmen have been in the woods selecting the little trees which are to gladden many homes that will never know or suspect their origin. Farmers in certain sections of the Dominion, too, have had sufficient foresight and energy to plant their rough and stoney lands to this crop and annually harvest a small but profitable yield of Christmas trees.

In the last fiscal year the United States purchased trees from Canada to the extent of \$83,666, the bulk of which was undoubtedly made up of Christmas shrubbery.

Holly and Hothouse Blooms

Another forest production which is peculiarly associated with the Christmas season is holly. Holly in Canada is almost exclusively confined to the Pacific coast province of British Columbia and residents of that province are just beginning to realize what a big demand there is for the shrub once it is known it can be obtained. The market is expanding so largely that the industry is beginning to develop into a substantial one. Ranchers are coming in certain sections to engage extensively in its production, and, according to one of these, eight hundred dollars an acre is a fair average income to be secured from holly-growing.

In the popular conception of the northern winter, Canada is the last place to which one would come for flowers at the Christmas season, and it should banish some hardened misconceptions of the Dominion's winter clime to learn that Alberta, in the dead of winter, sends out a profusion of blossoms to decorate the homes of cities of the United States. In the little city of Medicine Hat is a nursery known as "The Rosery" which all the year round, and especially at Christmas-time, distributes thousands of the most delicate blooms over the continent, not a few crossing the border and going to United States cities.

A Satisfactory Year

The Dominion of Canada, arriving at the termination of the year 1922, has every reason to look back over the past twelve months with a sense of intense satisfaction and to face the prospect of the next twelve months in a spirit of faith and optimism. The past year has seen the last struggle in the emerging from the period of post-war depression and the taking of the first lengthy stride in the new and more prosperous way. This is not a mere venturing of opinion, but an existing state of affairs which will only be appreciated when the cold, convincing figures of production are published and enjoyed in retrospect. In practically every phase of her national activity Canada has, in 1922, seen the dawn of brighter conditions evidenced in enhanced output.

The cost of living has substantially declined. The index of wholesale prices is lower than it has been for years. The average cost of the weekly family budget is only \$10.28 as against \$11.82 in 1921 and \$15.95 in 1920. It has still some way to go before reaching the \$7.83 of 1914, but the tendency is rapidly in the right direction.

Unemployment has practically disappeared. In fact, as a consequence of the draining of the East by the West for harvest workers, an artificial labor shortage was created temporarily, certain trades, notably building, being acutely affected.

Perhaps nothing so illustrates Canada's rapid recovery as the retrieval of the Canadian dollar, which, quoted at a discount of 19 per cent at the end of 1920, is at a slight premium at the end of 1922.

Canada's Trade Gratifying

Canada's trade is gratifying from many view points and substantially increasing. Since the war the Dominion has risen from ninth to fourth place among the great exporting nations of the world, sending her goods to forty-four countries, and leading all countries in the per capita volume of exported goods. On the operation of the first

six months of the current fiscal year, there is a favorable trade balance of approximately \$32,000,000 as compared with an adverse trade balance of about \$36,000,000 last year.

Fresh capital for development has come into Canada at a very pleasing rate during 1922 and industrial establishment has progressed on a substantial scale. The outstanding feature has been the resumption of the flow of British capital and the first move in the further establishment of branch houses by British manufacturers. There is in sight, as evidenced in the expressed desire of both countries no less than economic necessity, a great trade development between the Motherland and Canada.

The Canadian crop has been a bumper one, uniformly heavy in all grains and roots and falling in volume little behind the sensational yield of 1915. This being marketed, for the main part, overseas on account of the barriers raised by the United States tariff, is resulting in great railway activity and increased business at Canadian terminal ports.

There are to be substantial increments over the figures of 1921 in practically all Canadian minerals. Gold is expected to reach a new production record in Ontario and British Columbia. The mining year has been featured with many new discoveries, some of which are important, and development has been initiated in the neglected fields of Quebec.

Timber, Fishing, Construction and Trapping

The timber season has been a busy one. In shipments of lumber Montreal has doubled its last year's figures and Quebec exceeded 1921 exports by fifty per cent. On the Pacific coast there is a considerable increase, and likewise in the Maritime ports, in which provinces the cut this winter will be trebled. A record for Canada has been achieved in newsprint output, and with a ten per cent increase anticipated next year the Dominion production will be equal to that of the United States in 1921.

The fishing industry has had a banner producing year, there being substantial increases in the catch in every section—Prince Edward Island, Nova Scotia, New Brunswick, Quebec, British Columbia and the inland waters of the Prairie Provinces.

The building trades have been more active than for some time and a greater volume of construction has been achieved than in any year since 1914. Even the tourist traffic to Canada was this year greater than ever before, and this should be listed, as it is coming each year to assume a more important place in Canada's sources of revenue.

The big game and fur industry has been eminently satisfactory, and the Dominion was host to a goodly volume of visitors during the hunting season in the fall. There has been a considerable increase in the establishment of fur farms, and the trapping season at present in progress is stated to be one of the best Canada has had for some time.

In view of the many rigors of the immediately preceding years and the many obstacles she has had to surmount in her national progress, Canada has every reason to feel satisfied with what she has accomplished in 1922, and every justification to regard her future without apprehension. Canada still has her problems, some of sufficient seriousness, but the difficulties arising from her economic position after the war have been largely overcome, and Canada has in a spirit of equality taken her place among the nations of the world, striding out with them.

A Loaf of Bread a Day

How large is Canada's wheat crop this year? To the man on the street the fact that Canada has a crop of over 340,000,000 bushels means little more than a mere jumble of figures. But, if you were to tell him that if Canada's crop of wheat this year was ground into flour and made into bread, there would be enough to supply

every man, woman and child in England with a loaf of bread weighing twenty-four ounces every day for a whole year, or a similar nation of the entire population of the United States for four months, he would gain a clearer idea of the enormous crop of wheat that Canada produced. With a minimum wheat yield of 343,000,000 bushels, statistics show that this quantity is equivalent to 20,580,000,000 pounds of wheat, or 10,290,000 tons, or 73,500,000 barrels of flour, which could be made into 12,862,500,000 loaves of bread, weighing 24 ounces each.

Nearly everybody has read of the march of the German soldiers through Brussels and how it took several hours for the troops to pass a given point. This event was said to be unique in the annals of military history, but can you imagine 7,350 trains running at intervals of five minutes apart, taking 252 days to pass a given point? That is just how long it would take 257,250 (40-ton) grain cars loaded to capacity to move this year's wheat crop. Placed end to end these cars would make a train 1,946 miles long, or one extending from Montreal to a point 26 miles west of Swift Current, Sask., or from New York to Denver, Colorado. Allowing thirty-five cars to a locomotive, it would require 7,350 to haul 257,250 cars, which would make a total length of cars and locomotives combined of 2,060 miles.

The largest trans-Atlantic freight carrier of the Canadian Pacific Steamships, Ltd., is the S.S. Bosworth, with a capacity of 352,000 bushels of wheat. It would take 974 steamships of the Bosworth's capacity to carry the wheat crop of the Prairie Provinces across the ocean. Taking the Bosworth's gross tonnage at about 6,000, this would mean a fleet of 5,844,000 gross tons, or the largest mercantile fleet in the world with the exception of the United States and the United Kingdom.

Women and Beekeeping

Women are breaking into every line of endeavor in Canada, even to invading fields previously considered to be peculiarly man's. Last summer a taxi-cab company, not only the directors and officials but also the employees of which were women, was organized at Vancouver. The same province saw the elevation of the first Canadian woman to cabinet rank in the provincial government. This year the first woman to be elected in a Federal riding took her seat in the House at Ottawa. The first Western Canadian woman to set out on the practice of law opened an office in an Alberta city a short while ago, and in the fall term McGill University registered its first woman dental student. Pioneer women are to be found in practically every line of activity in Canada, and the women who have achieved success and prosperity in the various phases of farming are numerous in every section of the country.

Another laurel must be added to the honors gained by Canadian women as pioneers in all professions in the announcement that the newly established course of bee husbandry at the University of Saskatchewan is to be presided over by a lady of the province, Miss Ethel May Brayford. It is only of recent years that the Canadian Prairie Provinces have come to pay any serious attention

to the production of honey, and whilst there is a truly remarkable development under way, the Province of Saskatchewan has fallen behind her sisters, Alberta and Manitoba, in this respect, and it is in an effort to remedy it that the course has been instituted.

Woman Professor in Saskatchewan

Official attention was drawn to Miss Brayford when she was acting as lecturer and demonstrator with bees on the Saskatchewan Better Farming Train. Bees with her have been a life study and honey culture engrosses her exclusively. In the year 1921 she gathered 915 pounds of honey from 9 hives and sold it at 40 cents a pound, in addition to several hives which she disposed of to neighbors. Though the 1922 crop has not been weighed, 130 pounds of honey were extracted from the first hive. This work marks her as a real practical exponent of bee culture, in addition to what pedagogic qualities she may possess, and explains her appointment to this important position.

Miss Brayford's observations should be of interest to prairie farmers concentrating their activities on large herds of cattle or expansive wheat fields. "I think bees are the most profitable side line for farming one can have," she says, "for they carry the pollen to all flowers on vine and fruit crops." In her opinion beekeeping is one of Canada's neglected industries, this being particularly true of the West, and thousands of dollars are lost every year which farmers might be adding to their incomes. She believes that the culture can successfully and profitably be taken up by more women.

That interest in beekeeping in Saskatchewan and the entire West is increasing is apparent from the many requests Miss Brayford has had for hives as the result of her tour and the manner in which she has been bombarded with letters asking advice on the establishment of hives. Her own success is built up on a lifelong study of the insects and a natural love for what was first a hobby and has now developed into a profitable commercial undertaking. Coming from the East to Saskatchewan, she realized she could not follow the same methods owing to the shortness of the season, and she has developed the industry on lines peculiarly adapted to the Western provincial conditions, which she will disseminate through the beekeeping course at the University.

Manitoba has Fourteen Thousand Colonies

Though beekeeping has not yet attained important proportions in the Prairie Provinces, it is rapidly reaching the status of an industry worthy of note, and there is nothing in the prevailing conditions of that area to prevent its continuous increase. A farmer in the Grenfell district of Saskatchewan obtained one thousand pounds of first class honey from thirteen two-frame hives, in addition to which the bees increased to seventeen colonies. A Northern Manitoba farmer secured \$1,500 in one season from 33 hives, and another farmer in the same province, from a stray hive which settled on his farm six years ago, has increased to 76 colonies, and last year the farmer sold more than two tons of honey.

In the year 1921, Manitoba had 14,721 colonies of bees, whereas there were only 7,593 in the previous year. Last year the province marketed approximately 1,000,000 pounds of honey, and this year there will be about 2,000,000 pounds to sell, bringing in a revenue of about \$400,000. There are about a thousand beekeepers in Manitoba and they are increasing rapidly. Manitoba is the most eastern of the Prairie Provinces, and its success in bee culture is rapidly attracting the sister provinces to emulation and the industry spreading the length and breadth of the area.

British Financier Lauds Canada's Progress

Sir Archibald Mitchelson, the well-known British financier, recently returned to London from Canada, which he had visited in connection with the affairs of the Porcupine Davidson Gold Mines, of which he is president, and expressed himself in optimistic terms regarding Canadian

mining prospects and general development in the Dominion. Though his remarks apply largely to the enterprise which he heads, he has a good deal to say in respect of Canadian progress in general which might be well digested by British investors and those in the British Isles contemplating investments.

"I am very sorry," observed Sir Archibald, "that British enterprise, either through apathy or scepticism, is fast losing all chances of repeating past achievements in the development of new gold-fields. Any good mining engineer who has studied the Canadian fields would tell you therein lie the next greatest source of gold production in the world."

The thought behind this observation admits of very wide interpretation and is applicable to British investment and interest in general in every phase of Canadian life. The Dominion is keenly appreciative of the many difficulties which, since the war, have beset the way of the British business man and investor to Canadian establishment and investment. Money was sorely needed at home in the work of reconstructing a badly disorganized trade and British funds were at a considerable discount in Canada. Canada has witnessed with great gratification indications of a trickling flow of British capital to Canada which before the war she was wont to welcome in such volume. With a great deal of pleasure she has seen, in the resumption of Britain's trade, a strong desire to develop business with the Dominions of the Empire and an awakening to a realization of how she must do this in the case of Canada, through the establishment of branch plants.

Canada, to Some Extent, Blameful

But from views which periodically trickle through, from chance remarks overheard, one cannot but conclude that there is a great deal of truth in what Sir Archibald Mitchelson is hitting at. Among sections of the people of the British Isles a certain amount of scepticism prevails over Canadian investments, a measure of doubt as to the permanency of Canadian development, a lack of faith in Dominion stability. The result is that, in the combination of circumstances setting British funds at a discount, British capital in Canada is rapidly declining to a secondary position.

For this state of affairs both Canada and the United Kingdom have been, to an extent, to blame. Canada in her younger days suffered severely from what in human beings would have been termed swelled head. Striving to develop and expand too rapidly, she lost all sense of proportion and experienced boom periods of exaggerated values and wild and unjustified enthusiasm. British investors took too little pains very often to ascertain the soundness of investments offered them and inevitably in some cases suffered severely. Canada is suffering from it yet. In many people of the British Isles who do not study Canada and follow its progress, it has left an unjust outlook upon Canadian affairs and a sceptical regard for any scheme calculated to transfer their moneys across the seas.

The British investor living across the Atlantic does not realize that it is a very different Canada which exists to-day from that which went through the hectic days of the pre-war booms, that every young country must undergo such spells in its infancy. They cannot know that the war ushered in a new era for the Dominion, and that in a clear comprehension of its legitimate economic position in the world and a just sense of proportions and values, it is undergoing a sane and steady development. It is not for a moment claimed that all Canadian investments are safe or that a certain amount of wild-catting is not inevitable, but in general there is a new saneness and stability about progress and development is proceeding at a rate as rapid as before but in a thoroughly reliable and sound manner calculated to best further the interests of the Dominion and its investors.

U.S. Investments Increasing

The most convincing proof of this is to be found in the manner in which United States investment in Canada is increasing. Though opportunities of Canadian invest-

ment have always been greater to the Republic in the proximity of that country to Canada and the easy facilities of visit, estimate and supervision, it is only of recent years that that country has come to be a formidable rival of England in the amount of money put into the country and to outdistance it in industrial establishment.

Previous to the outbreak of the war the capital invested in Canadian enterprise of every description was overwhelmingly British. In 1920 American investment in Canada was variously estimated at from 1,250,000,000 of dollars to 1,600,000,000 and British capital about double. In the middle of 1922, however, according to a pronouncement in the Legislature, England had invested in the Dominion two and a half billions of dollars and the United States nearly two billions. There are now more than eight hundred United States branch factories in Canada whilst England has but a few.

Britain's resumption of trade and the possibility of sterling journeying back to a position nearer par will have a great effect in adjusting the situation and re-establishing faith in the Dominion. For the rest, more British capitalists and investors should visit the Dominion and form their own opinions of the state of Dominion development and the promise of the future. This is the surest method of both countries securing the greatest amount of satisfaction.

Such visits, on the part of individuals or organized parties, have been fraught with the greatest mutual benefit in the past, and the utter surprise and astonishment frankly disclosed at all encountered testify to the meagre knowledge extant on Canadian achievement. After a most successful trip across Canada of the British parliamentary party as guests of the Montreal Board of Trade, Holman Gregory, K.C., M.P., speaking in the Canadian metropolis, said: "Our general feeling is that we were absolutely astounded with the progress and rapid growth we from the mother country witnessed, with a new empire grown since the start of the Canadian Pacific Railway in 1881 and an incredible creation of wealth in both city and country."

Wheat and Flour Exports

Exports of wheat and flour from Canada to the United States, the United Kingdom and other countries in the year ending August 31, 1922, amounted to 194,003,407 bushels, valued at \$246,803,372, compared with 167,163,305 bushels, with a value of \$363,145,288, in the corresponding period of 1920-21, according to a statement issued by the External Trade Division of the Bureau of Statistics. Of this, wheat exports in the 1921-22 season totalled 158,549,757 bushels, value \$196,168,771, as against 136,173,785 bushels, value \$293,865,419, in the preceding period. Flour shipments in the year ending August 31, 1922, totalled 7,878,589 bushels, value \$50,634,601, compared with 6,886,560 bushels, value \$69,279,869, in the preceding twelve months. While exports of wheat and flour were greater in quantity in the 1921-22 season than in the preceding period, the value shows a considerable drop, due to the slump in price which occurred last spring.

The most notable features of the report are the remarkable decrease and increase in exports of wheat to the United States and the United Kingdom respectively, caused mainly by the Fordney tariff put into force this year by the United States Government. In the year ending August 31, 1921, wheat shipments to the United States totalled 49,213,551 bushels, value

\$103,468,829, compared with exports of 15,968,169 bushels, value \$19,127,407, in the following twelve-month period. Shipments to the United Kingdom in the year ending August 31, 1922, totalled 112,294,680 bushels, value \$139,346,678, which is a considerable increase over the corresponding period in 1920-21, when exports totalled 34,754,356 bushels, with a value of \$72,628,833. Of the total exports to the United Kingdom, 83,015,124 bushels were shipped via the United States and 29,279,556 bushels via Canadian ports. Shipments to other countries decreased from 52,205,878 bushels, value \$117,767,757, in 1920-21 to 30,286,908 bushels, with a value of \$37,694,687, in the following twelve months.

Wheat Flour Shipments

Wheat flour shipments to all countries, with the exception of the United States, showed an increase in quantity as compared with the preceding year, but all show a decrease in value of exports. The United States imported in the twelve months ending August 31, 1922, 679,299 barrels of flour, value \$4,308,888, as compared with 1,257,139 barrels of flour, with a value of \$12,271,861, in the previous year. The United Kingdom received 4,587,429 barrels of flour in 1921-22, against 3,625,425 barrels of flour in the preceding twelve months, with values of \$28,865,473 and \$34,732,800 respectively. A total of 2,611,861 barrels of flour were shipped to other countries in fiscal year ending August 31, 1922, with a value of \$17,460,240, compared with 2,003,996 barrels, value \$22,275,208, in the corresponding period a year ago.

With a wheat crop that is as large as that of the bumper year of 1915, if not greater, and with a decrease in wheat production in European countries, demand for this commodity in the coming months should be particularly active. Lately there have been numerous large shipments of flour to foreign countries, especially the United Kingdom, China, Japan and the West Indies. The flour mills in Western Canada are working to capacity in an endeavor to catch up with their Oriental orders, and there is an insistent demand from England for Canadian flour. Shipments from the Port of Montreal, both flour and wheat, during September and October have been unusually heavy and are indicative of an excellent season in 1922-23 for the export of Canadian wheat and flour.

Canadian Apples Lead

The Imperial Fruit Show recently held at the Crystal Palace, London, England, in which the Motherland and all Dominions came into active competition, resulted in another victory for the Canadian apple and served to show once more the superiority of the Canadian-grown fruit. Every section of the Dominion was successful in securing enviable awards, and the prize-winning apples comprised many varieties illustrating Canada's ability to grow this

fruit over a wide area and in great variety. Competing with many countries of the British Empire, Canada carried away 46 awards, consisting of 17 first prizes, 13 seconds, 9 thirds and 7 specials.

The Province of Ontario led the Dominion in obtaining 11 firsts, 9 seconds and 1 third. British Columbia won 4 firsts, 2 thirds and 2 specials. Nova Scotia secured 2 firsts, 3 seconds, 5 thirds and 3 specials. Quebec carried away 1 second and 1 third prize. Nova Scotia's triumph came from an exhibit of 20 boxes of a dessert variety and Quebec's from an exhibit of the same size of a culinary apple. British Columbia's prizes were won with Cox orange pippin and Spitzenberg, the seconds in these classes going to Nova Scotia and Quebec respectively. Nova Scotia won first for Gravensteins and Ontario first for King's.

Canadian apples have proved their superiority in every exhibition at which they have been entered. Their triumph at the National Apple Exhibition, also at London, England, where they entered into world competition in 1921, was even greater. The Province of Ontario won the silver challenge cup awarded to overseas exhibitors with the highest aggregate of points in fourteen classes and four first prizes, five seconds and one third. Nova Scotia won two firsts and a second, British Columbia a second and third, and New Brunswick two firsts and two thirds. In considering the awards secured by Canadian apples one may also harken back to the exhibition of the International Apple Shippers' Association held at Cleveland, United States, in 1913, when the president's cup was awarded to the Province of Ontario, giving it the premier position for apple production on the North American continent.

Every District Represented but Prairies

It will be noticed that in the list of high awards every province of Canada is represented with the exception of the three Prairie Provinces. It is not to be concluded that therefore these provinces cannot produce good apples; and whilst it is not suggested that they will ever be able to enter into commercial production, the time seems to be coming when more and more prairie farmers will grow apples on their land for their own needs.

Whilst the quantity of apples so far produced in Manitoba has not been large compared with the other provinces, more apples have been grown there than in either of the other Prairie Provinces. Large apples have been grown successfully as far north as Dauphin, and the transcendent crab and red or yellow Siberian will thrive much farther north or west than this. Manitoba has taken the lead, partly due to the fact that it has been longer settled and partly to the fact that the climate and soil of Southern Manitoba appear to be better suited for the culture of apples than other parts of the prairies. According to Government experts, as varieties are developed more suitable to the climate there is no doubt but that apples will be grown much more generally in Manitoba than they are to-day.

Encouragement through Experimentation in West

The fact that the small or crab apples can be grown so successfully in the Province of Saskatchewan and that some apples of the very hardy Russian varieties have been matured, leads experts to believe that there will be, in the future, other varieties originated that will succeed more generally. The wooded parts of Northern Saskatchewan, where the natural protection is good, will, it is hoped, yet be found well suited to the culture of the hardiest apples.

Apples, particularly crabs, have been grown in many sections of Alberta. The best results have been obtained in Southern Alberta, where good apples have been produced. Apples of fine properties have also been grown in the vicinity of Edmonton, where the climate is much moister. As far as is known, the farthest north that apples have been grown in Canada is at Fort Vermilion in the Peace River Country, nearly 600 miles north of the international boundary, where crab apples have fruited.

The Alberta Government has such confidence in making a success of fruit culture that this spring it is setting out large stocks of apple trees as well as other fruits in the schools of agriculture.

The time may not be far off when the three Prairie Provinces will in addition be growing their own apple supplies and every province of the Dominion be self-supporting in this regard. Meanwhile every section where horticulture has been long established is producing apples which secure premier awards in world competition and which are in demand in many parts of the globe.

Trade Expanding

On the top of reports from all sections of the Dominion of brisk industrial activity, with busy mills and factories working, for the main part, at full capacity, comes the trade report for the month of September, completing the returns for the first six months of the fiscal year and disclosing a gratifying expansion of trade in the right direction and a favorable trade balance. The total Canadian trade for the six months period ending September 30th, 1922, stood at \$759,374,880 or \$37,664,156 more than in the corresponding period in 1921, when it totalled \$721,710,724. In the month of September alone this year Canada's trade totalled \$132,252,691, as against \$119,395,686 in September 1921, an increase of \$13,857,005. The volume of trade for the completed year will undoubtedly be considerably in excess of that of last year.

In a survey of trade figures it is encouraging to note that the expansion in the volume of trade is due to increasing exports, which brought about this increment in spite of reduced imports. The United States tariff has considerably lessened the value of Canadian purchases across the border, whilst the Republic is still compelled to come to the Dominion, to the same extent, for certain commodities for which she is dependant upon that country, such as lumber, pulp and paper, as well as a certain amount of wheat. The United States still imports a greater volume of goods from Canada than from any other country, whilst Canada continues to be the United States' best market.

Imports Decreasing, Exports Increasing

During the six months' period under review goods to the value of \$363,915,736 were imported into Canada, as compared with \$378,815,250 in the same period in 1921, a decrease of \$14,899,514. Exports of domestic goods in the same period totalled \$388,233,296, as against \$335,677,131 in the previous year, an increase of \$52,556,165. For the month of September alone exports totalled \$71,592,628, as against imports of \$60,318,410. A favorable trade balance of \$11,274,218 compares with an adverse balance of \$1,662,305 in September, 1921, and of \$20,371,993 in September, 1920. For the six months' period ending September 30th, 1922, there is a favorable trade balance of \$24,317,560,

as against adverse balances of \$43,138,119 in the same period in 1921 and \$164,232,019 in 1920.

Taking the month of September as typical, the increase in the export trade of the country is exhibited in every item of produce. It is particularly marked in chemicals and iron and steel, which each increased about 200 per cent, and other ores, which increased nearly 100 per cent. Agricultural produce continues to be the leading item of export, followed in order by forest products, animal products, ores, iron and steel, non-metal minerals, chemicals and textiles. The only items of trade in which Canada's imports exceed her exports are in textiles, iron and steel and non-metal minerals.

The condition of Canadian trade is most gratifying at the present time. For five successive months Dominion trade returns have shown a favorable trade balance, and the tendency is still to increase the volume of trade through swelling the bulk of exports whilst decreasing, or at least holding stationary, the extent of imports. Foreign tariffs have driven Canada to the very desirable step of manufacturing at home certain of the raw products she formerly sent abroad in an unfabricated state. Her own tariffs, and inter-Empire preferences, have forced many manufacturers into establishing in the Dominion.

Between the two Canada is not only coming to more adequately supply her domestic market, but is in the position of having a greater bulk of goods available for export.

Though Canadian manufacturers have frequently been criticized for tardiness in developing foreign trade, an accusation which might at times appear justified in view of the lassitude sometimes exhibited when foreign countries have declared their desire and anxiety to engage in trade with the Dominion, Canada has in the past few years stepped up from ninth to fourth place among the great exporting nations of the world, and Canadian manufacturers are to-day exporting their products to forty-four different countries.

Canada's Recovery

Reproducing a chart issued by this publication, indicative of Canada's Trade with the United States, the New York "*Magazine of Wall Street*," than which no better financial authority is published, comments on the return of the Canadian dollar to par as follows:—

One year ago to-day the American visitor in Canada could take an American ten-dollar bill to a Canadian bank and exchange it for eleven dollars in Canadian currency. In other words, the American dollar in Canada commanded a premium of 10%.

Not many months before that, an American ten-dollar bill brought \$11.90 in Canada—a premium of 19%.

To-day, the difference between the two currencies is so small as to be negligible. A differential of 1-64 of 1% (to-day 1-8 of 1%—Editor) measures the present premium, and some contracts have been made on absolute parity.

The disappearance of the premium of the American dollar in Canada is, in some part, the result of a contraction

in American trade abroad; but in great measure it is the result of the expansion of Canadian trade and the very general and substantial improvement in the Dominion's economic position. The re-establishment of parity between Canada and America marks the ending of an era, as trying as it was heroic, in Canada's economic history.

In view of this recovery in Canadian affairs, American business men and investors are displaying considerably increased interest in their northern neighbor. The tendency derives added impetus from the friendship and amity which would naturally exist between two peoples who speak the same language and are in nearly absolute accord as regards customs and principles of trade and commerce.

The business man's interests centre on Canada's products of foodstuffs, her vast timber lands, her mineral resources and asbestos mines. While the Dominion has undergone development on a colossal scale in the last quarter-century, the business man is aware that her territory still embraces one of the world's few remaining open spaces, and that a steadily growing market is certain to develop.

The investor looks to Canada's big industrial plants—British Empire Steel, Canada Cement, Dominion Glass—her famous pulp and paper mills, including Spanish River, Abitibi and Laurentide, her utilities and her railroads, especially the empire-building Canadian Pacific.

Road Building in Quebec

A successful season of road building and repairing in Quebec has been concluded by the Provincial Department of Highways. As a result of this work several new districts, which hitherto were inaccessible for colonization purposes, have been opened up for settlement. In addition, the main highways, over which the tourist traffic from the United States and other Canadian provinces moves, have also been improved upon, resulting in a greater number of cars visiting the province this year and increased revenue for the Provincial Treasury. Altogether some 476 miles of regional and municipal roads were constructed in 1922. Repairs for the same two classes of roads totalled 111 miles, while maintenance was carried out on 2,530 miles. Earth roads improved and maintained in a permanent manner totalled another 238 miles, making in all 3,355 miles improved upon or constructed by the Department of Highways in 1922.

The building of new roads and the repairing of old ones for colonization purposes was a prominent feature of this year's work. In line with the Government's colonization policy, for which some \$5,000,000 was set aside in 1920, \$1,550,000 of this sum was used in 1922 to open 552 miles of winter roads, while 712 miles of passable roads were completed, 597 miles repaired and 57 made with bridges. The construction of these roads opened up several remote districts which were eminently suitable for colonization, and a large number of families were settled upon these lands with Government assistance. During the year ended June 30th, 1922, the Minister of Colonization, Hon. J. E. Perrault, reports the sale of colonization lots, comprising 220,000 acres, and of this area, several thousand acres have been cleared and will probably be brought under cultivation during the coming year.

Tourist and Commercial Traffic

The increase in tourist and commercial traffic on the provincial highways has brought about a more permanent form of construction. The old gravel roads on main highways where the traffic is heavy are gradually giving way to macadam, bituminous macadam and concrete. A total of 163.51 miles of main highways were completed up to October, with an additional 133.83 miles still under construction, and there is every likelihood of the whole programme being completed by the end of the year, making a total construction of main highways of 297.34 miles. Of this mileage the classification of roads shows 65.95 miles of macadam, 10.08 miles of bituminous macadam, 9.72 miles of concrete and 215.19 miles of gravel roads.

In addition, the municipalities, under the direction of the Department of Highways, carried out a very comprehensive programme of road building in 1922. In all some 399.01 miles of road were scheduled to be constructed, and already 313.33 miles have been completed. Favorable weather conditions during the fall months practically assures that this ambitious programme will be carried out in its entirety. Gravel roads accounted for 338.19 miles of the total, macadam 52.50 miles, bituminous macadam 7.73 miles and concrete .67 miles. The municipalities also repaired 111.60 miles of road, 75.49 miles of which were macadam, 17.25 miles of bituminous macadam, .49 miles of concrete, 7.08 miles of bituminous concrete and 11.29 miles of gravel.

The province has been receiving considerable revenue from tourists who have entered the province in their cars, and it is estimated that during the year 1922 alone more than \$12,000,000 was spent in Quebec. Figures compiled by the Provincial Bureau of Statistics show that in 1915 the number of motor cars entering the province totalled 3,430; in 1916, 7,581; in 1917, 9,429; in 1918, 9,177; in 1919, 18,105; in 1920, 31,918; and in 1921, 41,957. The 1922 total is estimated at well over the 50,000 mark.

With the improvement in highways and well-directed publicity which has been carried on by various Quebec tourist agencies in the United States and Canada during the present year, it is more than likely that 1923 will witness a greater amount of tourist traffic than ever before, and a consequent increase in money spent in the province.

Canadian Trade with Scandinavia

*By Peter Myrvald, Special Agent,
C.P.R., Norway.*

By virtue of the uniform high quality of Canadian commodities offered for export, and by adherence to the best British ideals of fair play, Canadian exporters are attaining a strong

position in the Scandinavian and Baltic countries according to Mr. George Petersen, one of Norway's foremost business men, chief of the Import Section of the well established firm, Loken & Company, Christiania.

When asked for a statement relative to further development of Canadian trade with the North-European countries, Mr. Petersen gave as his considered opinion that the commerce with Canada is destined to increase in volume year by year, particularly in such staples as grains, flour, sugar and provisions.

"The Northern countries are large importers of grain, flour, sugar and provisions, and I have every reason to believe that Canada will find these countries among her very best customers."

"Speaking of grain and flour, Canada's chief articles of export, it is worthy of consideration that Norway alone comes into the world's markets as a purchaser of 500,000 tons annually. These purchases are made for the Government Grain Monopoly, which I have reason to believe will continue in operation for some years to come."

"Norwegian import of flour from Canada started some twenty years ago, when Canadian flour had to sell at a discount in competition with the widely advertised American brands. It took several years before the trade became convinced of the superiority of the Canadian flour, which now is being recognized as the best obtainable."

Mr. Petersen is most laudatory in his remarks about Canadian millers with whom he has had dealings during the past twenty years. Speaking for his firm, who by the way, is one of the leading and the largest brokerage firms in Norway, he says:

"Canadian exporters of flour have always treated their Norwegian customers well by shipping uniform qualities, and by living up to the letter of the contracts. I can truly testify to the high respectability of the Canadian millers. In my twenty years' experience with them, I have known no instance where a contract has been cancelled, nor of any claims which have not been adjusted to mutual satisfaction. In fact, no draft drawn by a Canadian miller has been refused on account of unsatisfactory delivery. This speaks volumes for the integrity of the trade, and being characteristic of Canadian methods of doing business with foreign customers, it gives the chief reason for the strong position attained by Canadian exporters in the North-European countries."

"During the last two years, Canadian flour has suffered somewhat under the keen competition with American milling interests, but there is a growing interest in Canadian flour, not only in Scandinavian countries, but also in the Baltic States."

"If I should venture a suggestion, it would be this, that each barrel or bag of Canadian flour, sold for export, be stamped with the slogan: 'Made in Canada,'"

continued Mr. Petersen, who seems convinced that Canadian flour can capture any market on its merits.

Speaking of sugar, Mr. Petersen states that the annual importation to Norway of refined sugar is approximately 70,000 tons. In pre-war times about 50,000 tons were imported annually but in recent years consumption has increased, probably due to Prohibition.

Before the war, Norway obtained 80 per cent of her supply of refined sugar from Germany, while the Netherlands and the old

Bohemia supplied the balance. The first Norwegian purchase of sugar in America was made in 1915 through Mr. Petersen's firm, when this firm purchased 20,000 tons for the Norwegian Government. This contract was placed with New York interests, who continued to supply Norway while the Government Sugar Monopoly continued in operation.

A few weeks ago, after the monopoly had been lifted, Norwegian interests contracted for delivery of about 2,000 tons refined sugar from Canadian refineries, which, in Mr. Petersen's opinion, should be able to obtain their share of the Scandinavian and Baltic business. The Canadian refined sugar compares favorably with the best American brands.

Provisions of Canadian origin have not as yet found an active market in the North-European countries, due to the fact that they are of higher quality and commanding a correspondingly higher price than the American products offered for sale here. There is, however, a tendency towards increasing trade in these articles.

Mr. Petersen, who has wide business connections, covering the Scandinavian and Baltic countries, says that it is always a pleasure to him to recommend Canadian products, as he then can guarantee high quality and fair dealing. It is, in his opinion, only a question of time when Canada will control a considerable share of the trade with the Northern countries in grain, flour, sugar and provisions, of which they are large purchasers.

Canada's Postal Department

Many of our great industries would experience difficulty in existing if there was no suitable medium through which communication could be conducted with distant points with despatch and safety, and the part that the post office plays in the home and business life of the Canadian public is seldom thought of, but its value cannot be computed in monetary terms. From the International boundary to the Arctic Circle the Canadian Post Office Department handles the correspondence of the public, and this never-tiring machine functions with an efficiency which seems remarkable to the uninitiated. The letter or parcel posted in the little grocery-post office in some out-of-the-way country hamlet receives the same care and attention as that posted in the neat, attractive red letter boxes in the larger centres of community life. Never for an instant does this "machine" relax its vigilance in safeguarding the property of the public, and its responsibility does not cease until the letter or parcel is delivered to its destination.

Thirty-six thousand miles of railway are used by the Post Office Department in distributing mail in Canada. There are over 12,000 mail routes, many of which are a considerable distance

from the railway track, and which can only be reached by a motor or horse driven vehicle, dog-sled, or canoe. The Department operates 12,000 post offices, or one to approximately every 700 of Canada's population, as well as 5,300 money order offices. Many of these offices are located in palatial buildings, the property of the Federal Government. To receive the mail from the public the Department has distributed at convenient points over 8,000 street letter boxes and receptacles, as well as 200,000 rural delivery boxes. In the cities and towns the letter boxes are cleared several times a day, while the country mail is collected regularly each day.

Half a Billion Letters Carried

Over half a billion letters and post cards were carried by the Department in the fiscal year ended March 31st, 1922, according to Government statistics. In addition, the Department handled 350,000,000 newspapers, 50,000,000 parcels, and 250,000,000 circulars, making in all well over a billion missives carried for the Canadian public during the past fiscal year. At all hours of the day, mail is moving from one point to another. Inclement weather does not retard the delivery of the mails. Even though other public utilities fail to perform their duties, the mail service must go on, and it is that idea of unfailing loyalty to the service that has resulted in Canada having one of the finest of postal systems.

The Post Office Department can, with justification, claim to have the largest money order business of any organization in Canada. During the period under review the Department issued postal notes and money orders to the value of \$295,000,000, of which sum money orders represent \$270,000,000 and postal notes the balance. Money orders issued and handled by the Department totalled 10,000,000; postal notes 6,000,000; Canadian orders issued on Great Britain 520,000; British orders issued on Canada 55,000; Canadian orders issued on the United States 680,000; and United States orders issued on Canada 340,000. In all 15,595,000 money orders and postal notes were issued and handled by the Canadian Postal Department in the year ended March 31st, 1922.

Ten Thousand Persons Employed

To operate this huge organization great skill is required and the expenditure of much money. Approximately 10,000 persons are employed by the Department, to whom an annual salary amounting to \$14,407,000 is paid. In addition, the rural mail carriers must be paid, the railway for transporting the mail, as well as innumerable other small items which are necessary in the operation of this business. The annual cost of rural delivery service totals \$2,750,000; salary expenditure \$14,407,000; railway mail service

\$15,000,000, making a grand total of slightly over \$30,000,000, or an expenditure of approximately .003 cents for each letter, package and newspaper carried by the Post Office Department of Canada.

To offset this huge expenditure the sale of stamps nearly equals the amount of expenditure, being estimated at \$28,350,000. In addition, the Department derived a considerable amount of revenue from the sale of postal notes and money orders, which enables it to operate without expense to the people of Canada, and in addition leaves a fair surplus on hand after all expenses have been paid. The Department has been active in promoting a campaign for the more general saving of money by the public, and the Post Office Savings Bank, under the direct supervision of the Post Office Department, now has several thousand customers and deposits totalling over \$25,000,000.

Industrial Outlook in Western Canada

By John Sweeting, Industrial Agent, Western Lines, C.P.R., Winnipeg

Looking back over the year which is now nearly at its close, it is pertinent that a steadily increasing betterment of conditions is the main outstanding fact. In the early part of the year there appeared to be some justification for more active development than has actually taken place, but the small influx of new people and the disinclination on the part of capital to invest in new enterprises has had a retarding effect, and yet this, in some respects, has perhaps been of material benefit in enabling general financial and trading conditions to obtain a more permanent basis. It can confidently be stated that trading conditions have shown a consistent upward movement and that manufacturing and other industries throughout the year have been operating under favorable conditions with good orders and promising outlook.

British Columbia has had an active year. In mining, gold, silver and lead will generally show large increased production but a falling off in copper; very active development work has been carried on, old properties being reopened with much prospecting of new properties and new areas. In Southern British Columbia this is very noticeable, as is also the case in the Cariboo district. There has been a large amount of work on mining plants, such as the new concentrator at the Sullivan Mine and entire new plant at Britannia Beach. General construction work has been better; electrical development has shown activity, and recently the Britannia Mining & Smelting Co. has signed a contract with the B.C. Electric to build a power line from Lake Buntzen to Britannia Beach, a distance of some 30 miles, for the new plant. Extension of lines in the south has linked up additional towns with power and light. Lumber has shown steady increase both at coast and interior mills with larger export orders. Pulp and paper mills have acquired good business with new pulp plants and additions to existing ones in sight. Fruit and produce industry has been fair, prices somewhat low, but good crops. Shipping has been active throughout the year. Coal mining normal.

Improving Conditions Consistent and Noticeable

Alberta has secured a good grain crop, which was harvested with little difficulty. Activity has been shown in pushing to completion the various irrigation works under construction. The coal mines during the fall months have shown a large and increasing output, though a mild fall and late winter have restricted consumption. Building

fairly active, with much yet to be done. Prospecting oil areas and sinking of new wells is being actively carried on. Some valuable work has been done by the Government and private interests in connection with development of the tar sand areas of the North. In the Peace River and Grand Prairie country there has been steady development and fair crops. The fishing industry has been good with a steady improved output.

Saskatchewan continues to produce its huge wheat and other grain crops. There have been many adverse factors to deal with throughout the year, but the province has maintained a good level and is getting into first class condition with bettering prospects in view all the time. The lumber industry is showing improvement with a good deal of winter work. Investigations have been made by the Government of various potentially valuable natural resources. Coal mining in the south is active and experiments in briquetting at the big plant at Bienfait are being carried on. Industries have been active. Dairy products show an increase. Little activity at the sodium sulphate lakes, with two or three shipping, but a better outlook for next year.

Expressed Confidence in Western Future

In Manitoba, active building operations, mostly dwellings and public and office buildings, with improving prospects. A good crop, active dairying and produce. Some work done in the mineral areas, more especially at Rice Lake and Bird Lake, where copper ore of value is claimed. Lumbering industry is increasing in production, and program for winter work is calling for much additional help. Power developments on the Winnipeg River have been steadily progressing with the new plant at Great Falls ready next year, adding a large amount of cheap power available to the province. Industries will show a fair year with improving prospects.

At the Lake ports, Fort William and Port Arthur, industries have been active with pulp mills constructing large additions for paper mills and new elevators and enlargements. Ship building and repairs show a good season, and the heavy grain crop, though taxing the elevator capacity and shipping, has been handled expeditiously and without a halt.

Between the Lakes and the Manitoba boundary there has been a year of steady development in agriculture and lumber industries, with the pulp and paper plant at Dryden active and the first unit of the new pulp plant at Kenora nearing completion.

It may even yet be a couple of years until the West can claim definitely prosperous conditions, but it is patent that improvements are consistent and noticeable. Building up again slowly but strongly. With gradual payment of outstanding debts, stabilizing of prices, more settlement and capital showing an interest in Western resources and production, the situation of to-day will rapidly change. There is no question of want of confidence in the Western future, but a little impatience at the somewhat longer delayed turning of the corner than has been generally anticipated.

Canada's New Buffalo Herd

Some 5,000 American bison are ranging, free and unhampered, in the uncharted areas of Northern Alberta, between the Peace and Slave Rivers and the Great Slave Lake. It was generally believed that the buffalo herd of the Dominion Government in Wainwright Park, were the sole survivors of that mighty race, which once roamed the prairies in countless numbers before the advent of the white man. The Government, however, has received notes of the finding of this new herd in the North and arrangements are being made as quickly as

possible to provide a sanctuary for these beasts, in order that they may be protected from wanton destruction.

According to the trapper who first brought the report of this herd to the Government authorities, the animals appear to be increasing in numbers. They live in a territory which is thick with vegetation. In the summer they range in the hills, and towards fall wander to the lowlands, where they live on the plentiful red top hay in the sloughs, which provides them with food during the winter months. They are not molested by wild animals. Wolves have not been seen in the vicinity of the herd, and the care with which a few of the older bulls mount guard over the rest of the herd ensures safety from attack. The trapper reports that during all the time he was in the neighborhood of this herd he saw only one dead buffalo, and that one had apparently died from natural causes.

Are Running in Small Herds

The animals are accustomed to run in small herds, but they have been seen in groups of thirty to forty, and once in a bunch of fifty. There is plenty of land for the herds to roam over. There are no settlements within miles, and occasionally trappers and stray Indians visit the territory during their round of the traps. The animals show little signs of nervousness in the presence of human beings, and it is possible to get within one hundred to one hundred and fifty yards of them before they will take flight. The buffalo are in splendid physical condition, and a snap-judgment of one of the trappers places the weight of many of the animals at well over 2,000 pounds.

The Canadian Government has met with gratifying success in their endeavor to preserve the buffalo from extermination on the American continent. The original herd of tame buffaloes, which numbered 700 and was purchased in Colorado about twelve years ago, has grown steadily and to-day numbers around 6,000. They are enclosed in a park at Wainwright, Alberta, approximately 100,000 acres in extent. Instead of being depressed by coming into contact with civilization and gradually dying off, as a great many people expected, these animals took to their surroundings immediately, resulting in such rapid increases in numbers that the Government has considered it necessary to put into operation a plan for the killing-off of a certain number each year in order to keep up the physical standard of the herd.

A representative of the Department of the Interior is at present in the Northland investigating the possibilities of establishing a sanctuary for this new-found herd. The undertaking will involve much expense and labor. It is more than likely that the Federal Government will authorize the creation of the proposed sanctuary,

and if this is done, Canada will then be the proud possessor of the two greatest known herds of American bison in existence.

Fur Farming in 1922

According to revised figures of the Canadian Bureau of Statistics, there were 821 fur farms in Canada in 1921, comprising 775 fox farms, 12 mink, 10 racoon, 3 marten, 2 skunk, 3 beaver, 3 muskrat and 4 Karakul sheep ranches. Of these ranches 375 were located in Prince Edward Island, 108 in Nova Scotia, 64 in New Brunswick, 109 in Quebec, 94 in Ontario, 25 in the Prairie Provinces and 37 in British Columbia and the Yukon. The total value of the sale of fur-bearing animals and pelts sold from fur farms in that year was \$1,498,105. Compared with the year 1920, 1921 showed an increase of 225 fur farms for the twelve months, or over forty per cent, and in the sale of animals and pelts an increase of \$346,449.

It will be some time before the statistics of the operation of Canadian fur farms in 1922 will be available, but such a survey as can be made of the situation at the present time reveals every indication of a further substantial increase in this comparatively new Canadian industry and the yet wider spreading of the popularity of the product of the Dominion's domestic establishments. Not only has Canada been the founder of the domestic fur-breeding industry and continue to maintain her early prestige in this regard, but she has been instrumental in establishing the fur-breeding industry in many other countries where Canadian foundation stock has been in demand.

Raw furs are the chief commercial product of the wild life of Canada, and as such represent the only economic return from a large area of the Dominion. Though the greater part of this area will be a perpetual trapping ground and source of raw furs, agricultural settlement tends to curtail this region to some extent, and the increasing establishment of fur farms is calculated to offset this depletion and keep up to standard the Dominion's annual fur output. The total value of the raw fur production of Canada for the season 1920-21 was \$10,151,594, comprising pelts of fur-bearing animals taken by trappers and those raised on fur farms, the revenue from the latter, at the present time, constituting only about six per cent of the whole.

Foundation Stock Widely Distributed

In the experimentation with domestic fur farms in other parts of the world the foundation stock has almost invariably been secured from Canada, and where these farms have been successfully established stock has been introduced from the Dominion for purposes of improvement. In the past and immediately previous years, foxes and other fur-bearing animals have gone from Canada to the United States, England, Japan, Switzerland, Russia and Norway. A recent despatch from London, England, described the development of silver and black fox raising in Ross-shire, Scotland, into an important industry, which district imported its foundation stock from Prince Edward Island two years ago. Among the larger Canadian fur shipments of the year were three hundred foxes from Prince Edward Island for points in the United States and 100 foxes from New Brunswick for New York State, whilst a large fox-ranching and fur-marketing organization in Minneapolis made heavy importations from the Island.

The year 1922 was marked by a substantial extension in the number of ranches throughout the Dominion, the extent of which will not be known until Government statistics are published. It will be noticed in the figures of past years that the domestic fur-raising industry of Canada has been largely confined to the East, but the outstanding feature of 1922 has been the development of the Western provinces in this regard. Early in the year a ranch with \$100,000 worth of stock was established at

Salisbury, New Brunswick, and one with \$50,000 at Sackville in the same province. Another Eastern establishment was a muskrat ranch at Newboro, Ontario.

Industry Extending in Western Canada

One of the first Western establishments of the year was a fox ranch at Medicine Hat, Alberta, with \$50,000 capitalization. In the same province the ranch established at Camrose some years previously shipped furs to London and New York. Within the past month 264 silver-black foxes were shipped from New Brunswick to become the nucleus of the ranching enterprise of the Calgary Fox Ranch Company, recently organized. A fox ranch was established during the year near Winnipeg and ranches at Saanich and Merritt, British Columbia, all of which are prospering.

In making a review for 1922 of the domestication of Canadian fauna, the important significance of a new innovation should not be lost sight of. This was the successfully getting under way of the first reindeer-raising enterprise, that of the Hudson's Bay Reindeer Company, headed by the explorer Stefansson, which introduced six hundred of these animals from Norway and turned them out on their expansive lease on Baffin Island. This may be the commencement of a new industry for Canada of great possibilities.

During the fall of the year, Canadian big game has been found numerous in all sections and proved the same potent attraction. Nearly all migratory game fowl, according to reports, have increased during the year to a marked degree. Fur-bearing animals in the Northland are stated to be plentiful and in good condition and trappers face a profitable season. Canadian national fur sales are more firmly established than ever, and each successive auction proves to a greater degree the ability of the quality and quantity of the Canadian pack to attract buyers from every corner of the globe.

Across Canada—Nelson

Nelson occupies an important place among Canadian cities and towns of the first rank because it is the capital, in every respect, of the Kootenay district of British Columbia, an expansive area possessed of diversified natural wealth which stretches from the International boundary northward to the Okanagan Valley. Because this valley, in view of its tremendous possibilities, is only yet very partially developed, Nelson appeals to the imagination rather as a city of the future than the present not unimportant little town. An attribute which can never be taken from it is its engaging beauty, unsurpassed elsewhere in Canada, due to its ideal site perched perilously on the edge of Kootenay Lake, over which tall mountains, which form the sides of the azure bowl, tower.

The Kootenay district is continuously attracting greater and more widespread attention, though this is insignificant in view of its vast potentialities, its wealth of cultivable land, minerals, lumber and fishing grounds. Already, however, it is the scene of a wide variety of activities, a region of fruit farms, mining and lumber camps, a holiday resort and sportsman's mecca. To cap its ideal qualities, the Kootenays have a fine and equable climate, where extremes of temperature are unknown, making them excellent for residence and permitting industries to be followed with a minimum of handicap.

The West Kootenay district contains over one and a half million acres of land suitable for fruit growing, and 150 varieties have been grown in the district, many of which have taken premier awards at the world's greatest exhibitions. Kootenay fruit is generally grown without irrigation, the annual precipitation being usually sufficient to bring the crop to the highest perfection. Development of fruit growing in the area is yet infinitesimal, in view of what can be undertaken, and the opportunities existing for horticulture are exceeded by few other localities.

Rich in Commercial Possibilities

The area is rich in commercial lumber, the most valuable trees being fir, cedar, tamarack, white pine, hemlock and spruce. Nelson has become the centre of an extensive lumbering district with about one hundred sawmills in the neighborhood with a capacity of about 500,000,000 feet. Roughly about one-third of the provincial lumber cut is attributable to the Kootenay district, and the district has by no means reached the limits of its possibilities of production. There is little doubt but that in time Nelson will develop into a centre for the pulp and paper industry as well.

The region about Nelson constitutes one of the first mineral producing areas of Canada and has produced some of the Dominion's most famous mining camps. Gold, silver, copper, lead, coal and zinc are found there, and as far back as ten years ago the claims tributary to Nelson were producing at the rate of about \$14,000,000 annually. More than 90 per cent of the lode gold and of the silver of British Columbia originates in the Kootenay area. Its coal deposits are of enormous value and the smelting industry has made great headway.

Though primarily the supply and shipping point for the Kootenays, distributing over a wide area, Nelson is making remarkable progress with its own manufactures, and industrialists are coming to give it more attention. Factories exist there for the manufacture of cigars, boxes, saw and shingles; there are brickyards, breweries, a jam factory, mattress and soda water factories, boat and launch building yards, sash and door factory, match factory and plant for the manufacture of beekeepers' supplies. A recent establishment was that of a soap manufacturing concern. Twenty wholesale houses distribute over a wide area, which is also served by four banks.

Hot Springs and Glaciers

In the neighborhood of Nelson are hot springs, glaciers, great cataracts, and the town gives entry to an excellent holiday, fishing and sport centre, where comfortable lodges have been established with boat liveries, and fine fishing, fowling and big game hunting are possible. In the waters of nearby lakes the Rainbow

trout and other fish make their homes, whilst within easy distance of the city, in the great ranges of the mountains, deer, goat, Rocky Mountain sheep, cariboo and grouse offer fine hunting expeditions.

These varied attractions are giving Nelson a greater prominence on the map of the continent each year, and more and more people are discovering it. From the south it is reached by the Crow's Nest branch of the Canadian Pacific Railway and a fine boat service up Kootenay Lake. South, from the main line, it is arrived at by an equally enjoyable boat trip through the Arrow lakes. Many residents of Seattle, Spokane and other Pacific cities come there year after year over the roads which cross the International border.

Nelson, with its wealth in mines, in agricultural lands, in climatic and scenic attractions, has a future dependent only on increased population.

The Doyen of the C.P.R.

Isaac Gouverneur Ogden, Vice-President of Finance of the Canadian Pacific Railway, whose photograph and New Year's Greeting appears on our front page this issue, was born in New York. He was educated in local schools, and commenced business in a New York mercantile house in 1860, subsequently entering the local banking firm of Fisk & Hatch. He entered railway service as paymaster and accountant of the Chicago and Pacific Railway in 1871. He was auditor of the same road from 1876 to 1881. Joining the C.P.R. in 1881, he was auditor of the Western Division with headquarters at Winnipeg until 1883. He was promoted to a senior position in Montreal as auditor for the C.P.R. in 1883. His next rise was in 1887 to comptroller. Since December, 1901, he has been Vice-President.

The accounting system of I. G. Ogden is said to be perfect. He is the man who controls the finances of the C.P.R. and after whom the Ogden shops just east of Calgary are named. On a recent birthday, Mr. Ogden said:

"Never mind my age or the fact that all the candles representing my birthdays won't go on a cake, but I am still hale and hearty and have a keen appetite for work. Just think, when I joined the C.P.R. at Winnipeg in the very early days the audit dept. was just composed of 6 clerks; now there are over 1,300."

Mr. Ogden is one of the men who have remained with the Company since its inception. He has seen it grow from the time when there were not funds enough to meet the payroll until to-day when the payroll comes along sharp on time every fortnight. When he was in Winnipeg, the road went as far West as Portage la Prairie, and southward to Emerson.

"Certainly nobody thought of what we would see to-day, although Lord Mount Stephen had visions," added Mr. Ogden.

Immigration—Selected and Directed

Speech by the Right Honourable Lord Shaughnessy, K.C.V.O., before the Kiwanis Club of Montreal, Thursday, November 16th

This is the first occasion on which I have had the privilege of attending a meeting of the Kiwanis Club, and I wish to express to you, Mr. Chairman, and the members of your club, my appreciation of the courtesy involved in your invitation to be present to-day and to address you briefly on the subject in which we are all so keenly interested—a substantial increase of our population. But although not present at your meetings, I have followed the proceedings of your Club in the newspapers, and have been impressed by the variety of your activities and the enthusiasm and organization with which they are prosecuted. In every movement to help the unfortunate, to put right those who had started on the wrong path, in every philanthropic and patriotic work the Kiwanis Club is an outstanding factor and driving force.

Nothing that the Club has heretofore undertaken exceeds in importance the campaign that it has been conducting for some time past, and is still conducting, through its committees and in conjunction with the Kiwanians throughout Canada, to focus the attention of the Canadian people, and through them of the Canadian Government, on the vital importance to Canada's future of a sound, sane, immigration policy, to be promulgated immediately, and to be carried out with intelligence and vigor.

Practically nothing has been done during the past eight years to attract population. Of course, the War interfered, and during the period of the War it would have been impossible to bring people here, but four years have elapsed since the Armistice, and much might have been accomplished in those four years, were it not for unwise immigration laws, the practical abandonment of publicity work, and the withdrawal of agents. We have been hiding our light under a bushel, with the result that we have lost to other countries thousands of excellent settlers, who should have come to us. Indeed, it is worse than that, because the census returns show that in 1922 Canada has a population of 7,200,000, and the census returns for 1921 show a total population of 8,700,000. But in that period the vital statistics show that there was a natural increase of 1,836,000, and immigration into Canada from other countries of 1,975,000. Had we received no immigrants at all, the natural increase should have given a population of 9,000,000, so that in these ten years we have apparently not only lost the equivalent of all the immigrants who came in, but did not even maintain, according to the census returns, the increase due to natural accretion, after making full allowance for our war losses. It goes without saying that many of those who left were foreigners, who were compelled to return to their home countries at the outbreak of war, so that the shrinkage was not unmixed evil, but it emphasizes the necessity for replacing them as quickly as we can.

Natural Resources Offset Debts

When we take into account the fact that our National Debt, which was \$335,000,000 in 1914, has now reached the staggering sum of \$2,340,000,000, or approximately the equivalent of \$270 per capita of our population, a National Railway System (acquired for reasons that are more or less defensible), that with its annual deficits absorbs the greater portion of our rather burdensome income tax, with no prospect of immediate improvement, we must realize that the burden is too great for a population of 8,700,000 people, and that if we are to carry on without serious inconvenience we must secure with all possible speed a very large addition to our population, and to our productivity. Great as is our National Debt, and serious as is the railway burden, we have within our country in undeveloped wealth in our lands, our forests, our mines, our fisheries, and other resources, ample assets to meet all our present and future requirements, provided that by industry and development this hidden wealth be made gradually available.

Plainly stated, we have on one side these enormous national liabilities and a sparse population. On the other side we have vast areas of agricultural land in the Western provinces within fifteen miles of existing railway lines, only waiting settlers to establish homes for themselves and their families, and to make these lands productive for their own advantage and for the general financial advantage of Canada; and in Ontario, Quebec and the lower provinces, there is still room for a great many thousands of settlers.

The mineral districts of our country thus far exploited are a mere patch on the great mineralized area of the Dominion, and our forests utilized in a sensible way will be a source of incalculable wealth. Clearly our policy must be to bring these matters under the notice not only of the people of Great Britain and the United States, but of many of the continental countries as well, and say to them, "We want you to come to our country and enjoy opportunities and advantages quite beyond your reach in your own country. We shall not deceive you, nor shall we permit others to do so. You will be informed of the climatic conditions of the particular portion of Canada to which you wish to go, and incidentally, we may mention to you, that in every section of the Dominion the climate is healthful and invigorating. With us you will enjoy the form of government in which every citizen has a voice, without reference to his position in life. If you are a laggard, do not come. We want men, and women too, who are industrious and who realize that indolence or indifference will lead to failure here, as it will in any other white country. We expect you to become citizens of Canada and to take active, intelligent interest in Canadian affairs; to see that your children are not only educated, but by your example encouraged to lead clean, moral lives. It is not our intention when you land on our shores to run you loose to shift for yourselves. We shall have bureaus or departments to take you in hand and advise and guide you until you have reached your destination."

Notwithstanding the War, Great Britain can furnish a very large number of settlers of the right class, and for the first time, I think, in history, the British Government is prepared to lend its assistance, financially and otherwise, to help those people to become established in one of the Dominions.

Norway, Sweden, Belgium, Denmark, Holland and other Continental countries can furnish us with thousands of rugged, splendid people who are weary of the struggle at home, and wish to seek their fortunes in a new land.

We have a good Government; indeed, each successive government is good in spots. Beyond question, it is the aim of the Government and all of the ministers to do what is best for the general interest of Canada. But governments are proverbially given to procrastination. The political effect of a policy cannot be put out of sight. Unquestionably the present Government recognizes the vital importance of the subject that we have under discussion, and has the best intentions in the world, but to get prompt and effective action there must be no relaxation of a campaign that has been, and is being, conducted by the Press, trade organizations, and the Kiwanians throughout the country.

What Is Required

To begin with, there should be some amendments to our immigration laws and regulations. The requirements of continuous passage from country of origin is surrounded by many difficulties. There can be no good reason why an Englishman temporarily living in Oregon, who had bought a ranch in Alberta, should under our regulations be denied admission as a settler because he came to us from Oregon instead of direct from England. Nor should we be prevented from getting any settlers from the United States, who, not being naturalized United States citizens, would be required under our law to return to their own country and come from there direct to Canada to ensure admission.

I am only referring to but one or two of many instances in the last couple of years that were brought to my notice. It is true that the regulations have recently been amended

with reference to British settlers, but the barrier against others still remains. The Act was originally designed to deal with a special menace, but I am sure that it can be amended so as to meet its original purpose without maintaining such serious obstacles to colonization and settlement. There are other details in the immigration regulations that require alteration, but it is not necessary to discuss them now.

There should be urged upon the Government the appointment without delay of a thoroughly capable, enterprising Minister of Colonization and Immigration. I think that my friend, the Hon. Mr. Stewart, who is with us to-day, will bear me out in the statement that the Department of the Interior is now overburdened with work, and that this additional load should not be placed on it. The Minister in charge of Immigration will be a very busy man, and should be able to give his whole time and thought to his work. Heretofore it has been a sort of tradition that the Cabinet Minister or Deputy in charge of Immigration should come from the West. There would appear to be no good reason for this. While naturally the main efforts of the Department will be directed to the West, there is room for considerable energy in Eastern Canada, and after all, it makes but very little difference whether the Minister comes from the East or the West provided that he is the right man.

Settlers are Available

The Minister should have a most capable staff of assistants and representatives in the Department at headquarters in Great Britain, the United States, and on the continent of Europe, to permit of this most important matter being dealt with aggressively. He should have a strong and intelligent advertising and publicity organization in Great Britain, the United States, Scandinavian countries and certain other selected countries of Central Europe, through which an invitation will be extended to every colonist of the class that we need, to give consideration to the opportunities offered by Canada for settlement. No allurements shall be held out that are not based on facts, and precautions should be taken to see that Government activities are not utilized by steamship agents and others to delude intending immigrants for the commission or remuneration that it might yield to them.

The Minister should be empowered to take whatever steps may be necessary to see that the settlers on arrival in Canada are advised, properly directed, and cared for.

I am confident that in all this the Government would have the active co-operation of the Canadian Pacific and other transportation companies, who expended such vast sums of money in co-operation with the Government to secure colonists a few years ago.

With this machinery in operation there can be little doubt that selected and directed settlers will come to us in large numbers with all the resultant advantages to the country.

I know that many of our fellow-citizens are imbued with the conviction that immigration should, in a large measure, be confined to people of British origin. This view is based on the idea that our future as a British people will be best safeguarded by populating our country with those of our own race. It strikes me that in this instance policy rather than idealism must prevail. Britain could not furnish us with the required population of the desirable type within reasonable time. We must get settlers where we can without exposing the country to the dangers of a defective and disastrous melting-pot. We shall not be damaged by an intermixture of new blood and new thought. Great Britain is a more vigorous and intellectual nation with her mixture of English, Scotch, Welsh and Irish than she would be if all were of one origin. Each nationality furnishes some attribute that the other lacks. Those of us who have had most experience in our own country will bear testimony that our national stability and our breadth of vision must be attributed to the fact that we are made up of two predominating races.

Increased Population Sole Remedy

Selected and directed immigration—the slogan of the Kiwanians—describes tersely and clearly what would seem to be necessary. Selection will ensure the right class of settlers to meet the requirements of the country, and direction will not only lessen the worry and uncertainty of the newly landed immigrant, but will be a reasonable surety that he will be properly allocated. Selection and direction will serve to minimize the danger of unemployment that sometimes results from immigration activity. Growth of population will naturally stimulate industry and create an increased demand for skilled and unskilled workmen. But there will be means at hand to ensure proper adjustment and avoid an over-supply of workmen from abroad to the detriment of our own.

The comparative gross earnings of the railway companies in any country may be taken as a rather reliable index of the growth of business activity in the country within a given period. In 1920 the gross revenue of the railways of Canada were about six times as large as they were in 1900, after making due allowance for any difference in tariff rates. During that period our population has increased by about 3,000,000 people. Think of what a difference it would make to our National Railway system, what opportunity it would offer for a reduction of taxation and of rates for the carriage of domestic commodities, if, within a short period, we could add 3,000,000 more.

Now, Mr. Chairman, I have endeavored to give you briefly, and without resorting to too much detail, my views on immigration and settlement. During the forty years that I have been associated with the development of Canada, there has never been a time when I thought that the emergency required prompter action on the part of the Government than at present. It is to be hoped that in the adoption and prosecution of a bold and vigorous effort to increase our population, the Government will have the confidence and support of every loyal Canadian citizen. It is not a time for hesitation or faint-heartedness. There is a future in Canada's vision that should and must be realized. Let us map out and adopt a policy that will, in the future, make Canada populous, prosperous and contented, an example and a blessing not only to the Empire, but to all mankind.

The Woods of Nova Scotia

The forests of Nova Scotia constitute one of that province's first natural resources. Economic settlement in the peninsula province has taken place about the coasts, convenient to the pursuit of the first industry which springs from the fertile waters off them. Parallel to the coasts lie undulating fertile valleys where many phases of agriculture have been followed from the earliest days of Canadian history and where countless small farms and orchards exist. The vast interior is one tremendous expanse of forest and lakeland, a magnificent area of wild beauty, a material resource of great worth and the haunt of many species of Canadian fauna.

The forests of Nova Scotia probably display a greater variety of arboreal growth than any other section of the Dominion. There, growing side by side, one encounters the spruce, pine, hemlock, oak and maple. Nor do the forests stretch in one monotonous sweep across the peninsula, but are broken by myriad lakes of varying expanse and entrancing beauty, many of them forming chains of waterways from the interior to the Atlantic. Conditions are the

best for the multiplication of game and fish, which constitute one of the province's main attractions.

Countless visitors are attracted to the Nova Scotia woods each year and at all periods of the year. Whilst the majority are fishermen and huntsmen, drawn by the excellence of the sport in lake and wood, there are many nature lovers and students for whom the provincial forests have a peculiar lure. Many such visitors have permanent lodges or cabins there to which they return each year, and not a few volumes on the fauna and plant life of the northern part of the continent have had their origin in the heart of the Nova Scotia woods.

The Economic Value

Economically the woods of the provinces have a considerable value, being worth in revenue about \$20,000,000 each year, not including about \$50,000 which annually accrues from the sale of hunting licenses and which might justifiably be credited to the woods. The estimated forest area of the province is 7,812 square miles, practically all of which is in private ownership. There is a heavy timber cut each year, and about 200,000,000 feet of lumber goes annually to the United States.

The Nova Scotia limits contain about 25,000,000 cords of spruce and balsam suitable for pulp and paper manufacture. The annual cut for this purpose is about 300,000 cords, making it a little more than eighty years before the exhaustion of supply in the absence of methods of conservation and re-forestation. There are no newsprint mills in the province, but six pulp mills, capitalized at \$20,000,000, with a production of about 25,000 tons of wood pulp annually, which is exported in its entirety to the United States.

Nova Scotia's contribution to the paper-making industry of the United States is not inconsiderable, and the province, though not actually making paper, gets the benefit of the industrial development due to the local manufacture of the pulp.

Demand for New Brunswick Lumber

In a year which is exhibiting brighter prospects for Canadian trade and industry in every section of the Dominion and covering practically every phase of activity, there is further gratification furnished by the fact that New Brunswick is sharing in this prosperity to the extent of experiencing an extensive demand for the product of her forests. The real significance of this is only appreciated when it is realized that the lumber industry in its various phases constitutes pre-eminently the province's most important activity. Not only is the demand and export of lumber fast approaching a state equal

to what were considered normal conditions in the years before the war, but the prospects are all for a vastly enhanced prestige for this first of New Brunswick industries.

About two-thirds of the normal New Brunswick lumber cut ordinarily went to the United Kingdom, the United States being the next heaviest consumer. The war years brought about an unprecedented demand for New Brunswick lumber from overseas which resulted in all mills working to capacity and many new ones starting up. The termination of hostilities cut off this demand suddenly and definitely and left New Brunswick dealers with large surplus supplies on hand. Up to the present summer there has existed a slackness in demand, with many companies going out of business and others operating at only partial capacity.

The present spring and summer have seen an extraordinary demand from both the United Kingdom and the United States and accumulated stocks have been largely cleaned out. Mills which have been closed down for years have started up again and others have increased their capacities from fifty to one hundred per cent. New Brunswick ports have been experiencing the busiest year in their history. The July customs receipts at St John were the highest on record. Receipts at Fredericton for the month of August were only one-third less than for the whole of last year. Campbellton and other ports have had a record year. All this is attributable to the lumber trade. The province's exports in all lines to the end of June had doubled. In the quarter ending that month they amounted to \$751,245, of which the sum of \$650,000 was represented by wood and wood manufactures.

Prospects for Winter's Cut Good

The cleaning out of accumulated stocks is being followed by great activity on the various limits, and according to government authorities prospects for the lumber cut this winter are exceedingly rosy. Practically all operators in the business have elaborate plans for the winter months. Government lumber scalers predict that the lumber cut for the season will be double that of last year. Further indications of this important provincial trade are not lacking. The rafting season on the Naashwaak this year constituted a record with more than 26,000,000 feet of lumber brought down, and the company expects to cut 15,000,000 feet this winter. One of the largest deals in Maritime lumber was recently concluded by Hollingworth and Withey when large New Brunswick and Nova Scotia holdings were secured at a price of \$2,000,000. The paper and pulp mill at Bathurst finds such a demand is being made for its product that an addition

is under construction which will make the ultimate capacity of the plant 100 tons of paper per day and employ an additional fifteen hundred men.

Factors which have brought about this fresh demand for New Brunswick softwoods from the United States, together with the fact that the hardwoods of Maine and other states are becoming depleted, is causing a good deal of attention from that country to be directed to the hardwood resources of the Maritime Province. Several Americans interested in hardwood manufactures have been in the province making investigations and have departed very favorably impressed. Little toll has been taken of New Brunswick hardwoods and there is a great wealth of maple, elm, oak, birch, beech and ash. In the probability of a demand for these, lumbering firms in New Brunswick are at the present time directing attention for extending the work of their plants to the manufacture of hardwoods. This opens up prospects of a much more expansive lumber trade between New Brunswick and the United States.

The return to normal conditions of the lumbering industry of New Brunswick is highly pleasing because it is the hinge of provincial prosperity, of prime importance no less to the trade of New Brunswick ports than to the actual lumbering operations and the many industries dependent upon them. The situation existing over the past few years has been an abnormal one due to artificial conditions, and with the depletion of the many woods of the United States and the steady demand from overseas, New Brunswick's industry should consistently be maintained in its present active prosperity.

Nitric Acid Manufacture in Canada.

Canada is to have a new and somewhat unique industry. Two years ago an American company established a small plant, costing approximately \$500,000, at Lake Buntzen, on the north arm of Burrard Inlet, near Vancouver for the extraction of nitrogen from the air by electricity. Two years of operation have proved the practicability and commercial profit of the scheme, and now the company plans an elaborate extension of the plant, at an expenditure of between \$3,000,000 and \$4,000,000, to take care of the production of nitric acid. There is stated to be only one other such plant on the North American continent.

The extension of the present plant for the manufacture of nitric acid has been forced on the company by the recent increase to 600 per cent in the United States tariff on nitrate products used in making dyestuffs, paints, inks and films which the Buntzen Lake plant has been turning

out. As the tariff shuts these products out of their chief market in the United States, nitric acid is to be manufactured, for which there is practically an unlimited market.

On account of the cheap power available it is claimed that the Canadian industry can manufacture nitrates cheaper than they can be imported from South America, which has hitherto been the principal source of supply. In the past fiscal year Canada found it necessary to import from other countries nitrate of soda to the extent of 22,838,208 pounds, worth \$581,907, nitric acid to the extent of 71,643 gallons, worth \$11,456, nitrate of ammonia, 2,017,078 pounds, worth \$127,484, and other nitrates to the extent of \$71,306.

There are immense possibilities to the industry of manufacturing nitrates from the air in Canada. Nitrates form a very important ingredient in fertilizing crops, and Norway utilizes over 300,000 horse-power in manufacturing nitrates in this manner and exports some 60,000 tons of fertilizer. Nitrates form the basic materials of other Canadian industries, and their absolute necessity in the manufacture of munitions is still an important national consideration. With Canada's unexcelled water-power resources the manufacture of nitrates from the air might become an industry of such proportions that the Dominion would take second place to no country in this regard.

Winter in Canada.

According to various estimates made Canada played the host to about two million foreign visitors this summer. Unfortunately, before the first touch of frost had painted the maples, the great majority were compelled to return to their homes. The strictly holiday season for the bulk of the people was over and duties which occupied them the greater part of the year called them again. With the departure of the summer months there was not the same comfort or convenience in motor travel, by which means so many tourists gain access to the Dominion. December arrived to find but a tithe of that host in the country anticipating the revels of that other Canada which is born only when the Frost King assumes his throne and casts his snowy pall over the land.

But there is another invading army which comes to fill up the ranks, not yet so numerous, perhaps, but increasing in volume every year. It is composed of the various battalions of winter holiday-makers who place Canada first of all as a land of unsurpassed winter enjoyment. They are those who realize the futility of travelling long distances and spending much money to disport themselves in the snows of Norway and Switzerland when close at hand is Canada, a series of ravishing Switzerlands stretching from coast to coast. They are alienated subjects of King Winter who come each year to do homage in his kingdom.

It is enormously gratifying to Canadians to see the evidences of a growing popularity of their country in the winter-time, for each fresh visitor initiated into the wonders of Canadian winter pleasure cannot but spread abroad the tidings of the good times. The summer tourist who may pride himself on a knowledge of Canada has but half completed his education if he knows not the hilarity of a Canadian winter. And seldom can he learn it except at first hand, for tradition dies hard and there are many

misconceptions to be overcome. To those who have formed their opinions of the Canadian winter upon popular novels and the movies and whose mind-picture is a weird maze of northern trappers, dog teams and blizzards, it is very difficult to imagine the gay winter life of the cities and towns of Canada and the pleasure the entire populace extracts from bending the wintry elements to their enjoyment.

Canada's Economic Life Uninterrupted

Winter does not to any extent interrupt the economic life of Canada, and the country's industrial activities progress in virtually the same manner. The only drastic change the life of the people undergoes is in that of sport, and the arrival of the cold months is attended merely by the relegation of tennis racquets and golf clubs to cupboards and the extracting from summer storage of skis, skates, toboggans and snowshoes. Though these instruments of summer pleasure are put away with reluctance there is a positive relish in anticipating the commencement of winter sports. Not everyone could credit the positive disappointment with which the prospect of a mild and snowless winter is regarded because they do not know the fascination of tramping to the twang of snowshoes, the keen delight of skimming on skates over the surface of a lake, the thrills of taking a hill on skis, of the breath-arresting shoot down a toboggan slide.

Greater numbers are coming to know these delights, however, as increasing numbers of tourists come to Canada to disport themselves at the centres of Canadian winter revelry. The growing popularity of the Canadian winter is most succinctly evidenced in the swelling traffic at localities where special arrangements have been made for visitors to participate to the full in Canada's hibernal gaiety with a maximum of comfort and a minimum of inconvenience, for instance at Quebec or at Banff.

Quebec and Banff in Holiday Array

Quebec—quaint old Quebec with its narrow streets, its towering churches, its old-world atmosphere and continental leisure—it seems, as it sleeps under its white mantle, to have been created solely as a locale for winter sports. It is veritably the throne of the Snow King. Here the visitor can pass rapidly, within a limited area, from one sport to another—skiing, skating, tobogganing, snowshoeing, dog-sleighting—and never wander far from the precincts of an ultra-civilization. He can spend a week-end there, crowded with incident and event from arrival to departure, and extract as much and varied pleasure as few places in the world can offer him.

Banff—a different Banff, which has shed her gay summer raiment for the simple white mantle of snow—the same exquisite jewel of the West set in a coronet of towering mountains. When carnival time comes at Banff the bright lights and colors, the sparkling gaiety combine to rival in brilliancy and exuberance the summer season, when hosts of tourists gather there to disport themselves among its varied attractions. There is the same ascending scale of hibernal merrymaking in which the reveller passes from one sport to another in the exhilarating air of the Rockies.

The same thing is happening all over the country from the Atlantic to the Rocky Mountains and beyond. Those who deprecate the Canadian climate do not realize that to take it away (besides what Canada would lose economically) would be to remove one of the Dominion's greatest attractions and possibilities of enjoyable pastime. Sceptics should see Dufferin Terrace on a winter afternoon, or Mount Royal at the week-end, or visit Banff at carnival time. Observing the brightly clad throngs disporting themselves upon the snow in a crisp and invigorating atmosphere, they could not honestly judge otherwise than that Canada has a winter which is a distinct asset to her people and attractions for her visitors in that season which rival those of summer.

WINTER SPORTS IN CANADA



1. Tobogganning in the Laurentian Mountains.
2. Happy young subjects of King Winter.
3. Ice hockey is one of Quebec's many sports.
4. Skijoring in the snows of the Rockies.
5. A Sunday morning tramp on Mount Royal.
6. Skiing away the week-end at Montreal.



Donald Fraser— from Immigrant Boy to Lumber Baron

LIKE a romance reads the career of the late Donald Fraser who came to New Brunswick in 1878 from Aberdeenshire, Scotland. After a rough, unpleasant voyage, he with the band of Scottish immigrants to which he belonged, landed at Fredericton, then but a small settlement. Aside from rugged health and strength and traditional courage, his capital was next to nil; he had confidence and independence, however, for he declined to accept the public bed provided for him in the Court House and spent almost his last penny in securing a room at the local inn. The first thing in the morning he got busy looking for work.

He found a job on the old New Brunswick Railway; with Scotch thrift, he saved his wages, and, having a slight knowledge of the lumber business, invested his interest in a tiny mill on Rivière du Chute. Here he boarded his men while his wife did the cooking and washing. Year by year, he managed to put aside a little, extended his business and grew to independence. When he passed away a short time ago, he was head of the Fraser Lumber Co., operated twenty large mills in New Brunswick and Quebec, two pulp mills in New Brunswick and controlled thousands of acres of valuable timber limits in these provinces.

Fraser Memorial Hospital— Fredericton N.B.

Speaking of the opportunities in Canada for young men, Mr. Fraser said, "Any mon with grit an' brains can make a living and plenty of money in New Brunswick. I wouldna be afraid to start all over again."

Under his will, Mr. Fraser donated \$300,000 to found a memorial hospital in Fredericton and left behind him a name—a success—which should be an inspiration to all. He was an honest, kindly, lovable character and to the end he gave to this country full credit for the opportunity it afforded him to achieve success.



Department of Colonization and Development

Canadian Pacific Railway

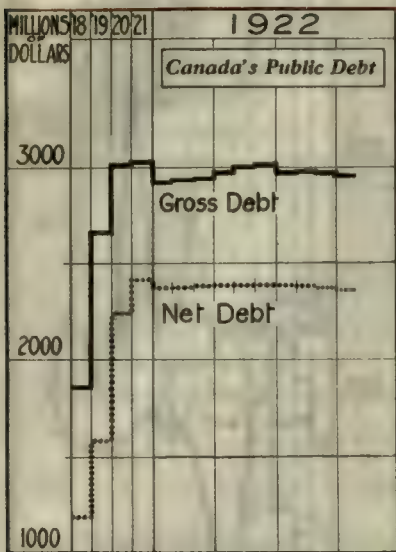
J.S.Dennis-Chief Commissioner.



Investors' Index of Canadian Conditions

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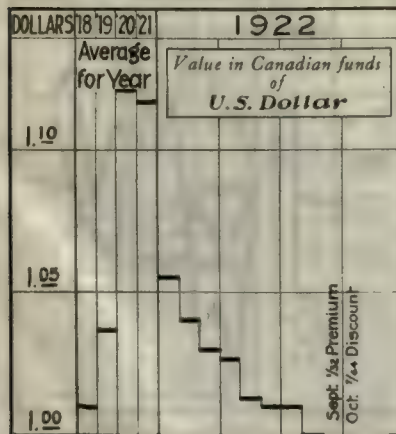
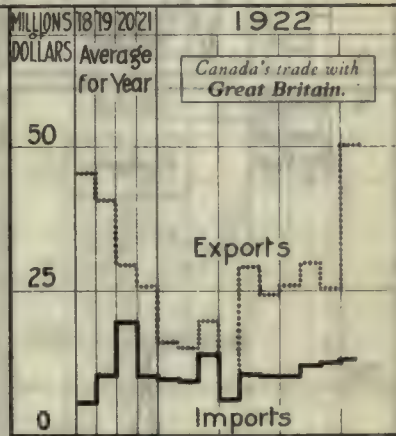
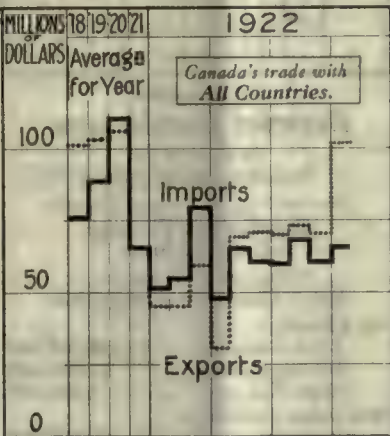
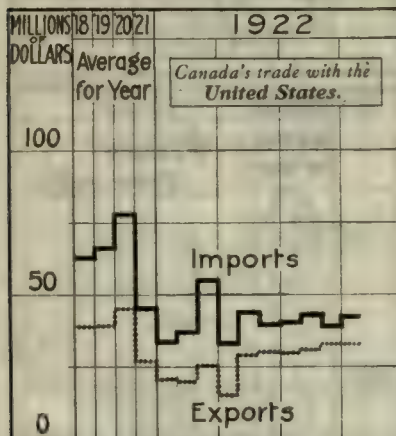
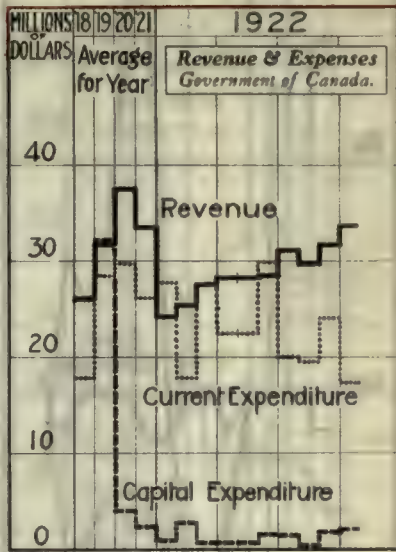
A permanent group of Charts on Key Statistics brought up to date and issued monthly by the Department of Colonization and Development, Canadian Pacific Railway, Montreal.



Government's Position (October)

Gross National Debt	\$2,955,574,679
"Assets"	585,815,653
Net National Debt	2,369,759,026
Revenue for October	33,727,732
Expenditure—	
Current Account	17,328,003
Capital Account	2,067,616

The Government paid off during October \$25,000,000 of Funded Debt, but against this there were increases in Miscellaneous and Banking Accounts and in Dominion Notes issued. The increase in Revenue for the month is partly due to interest received on securities held by the Government.



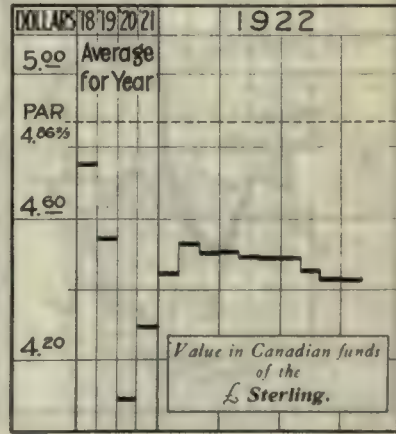
Canada's Foreign Trade (October)

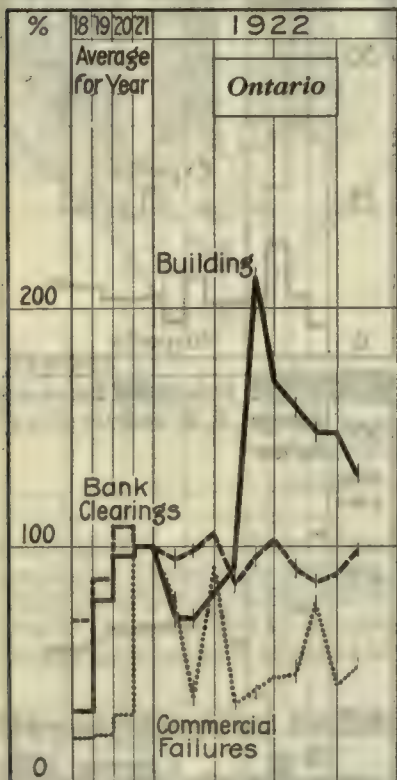
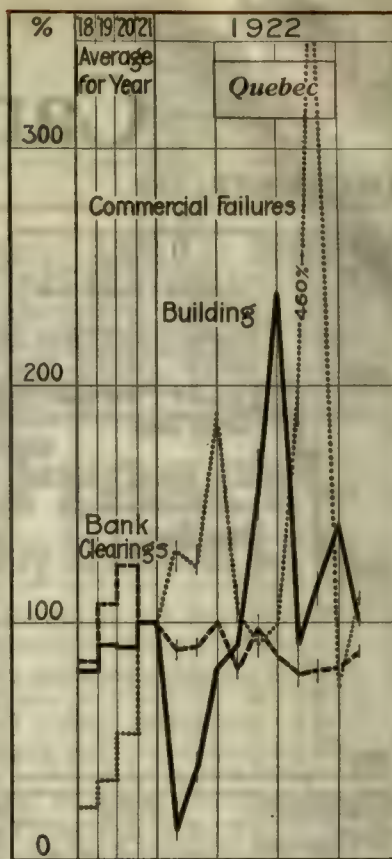
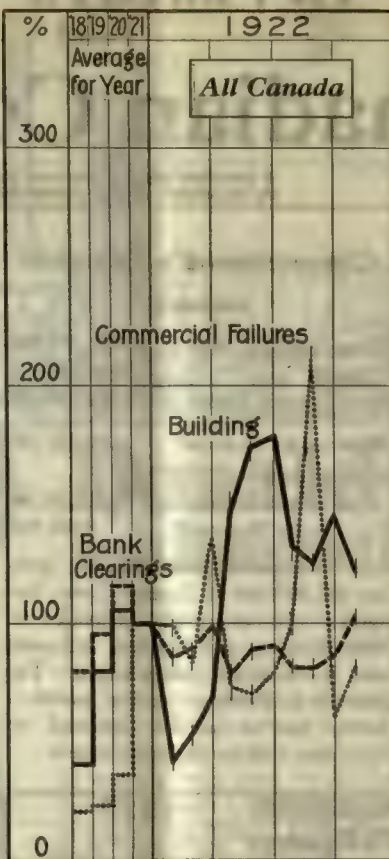
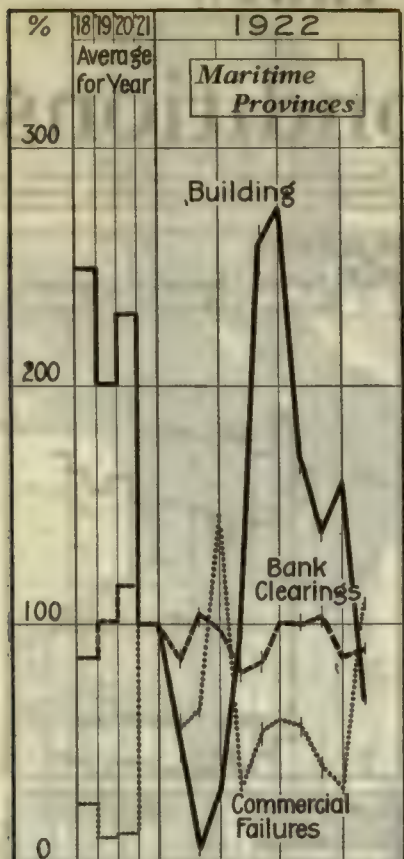
Total Imports	\$66,875,201
Total Exports	102,675,347
U.S.: Imports from	42,954,005
Exports to	32,878,533
Gt. Britain: Imports from	13,108,657
Exports to	50,565,681

Average value in Canadian funds of £ Sterling \$4.43 1/2; U.S. Dollar \$0.99 1/4.

Imports—Imports for Consumption in Canada
Exports—Exports of Canadian produce only.

Exchange figures are monthly averages supplied by the Bank of Montreal.





Comparative District Conditions

As indicated by

Building (Solid Lines)

(Maclean Building Reports, Limited)

Commercial Failures (Dotted Lines)

(Messrs. R. G. Dun & Co.)

Bank Clearings (Dash Line)

All Canada:

Bank Clearings\$1,496,910,800
Building Const. 24,270,300
Com. Failures 4,688,500

Maritime Provinces

Bank Clearings\$ 28,709,700
Building Const. 520,400
Com. Failures 367,600

Quebec:

Bank Clearings\$ 449,353,200
Building Const. 5,126,000
Com. Failures 2,672,000

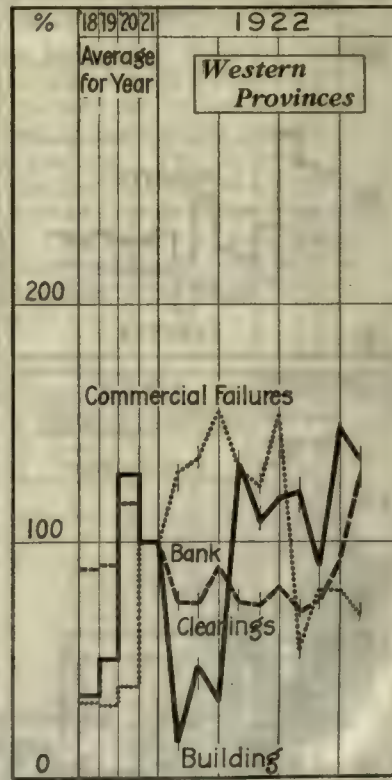
Ontario:

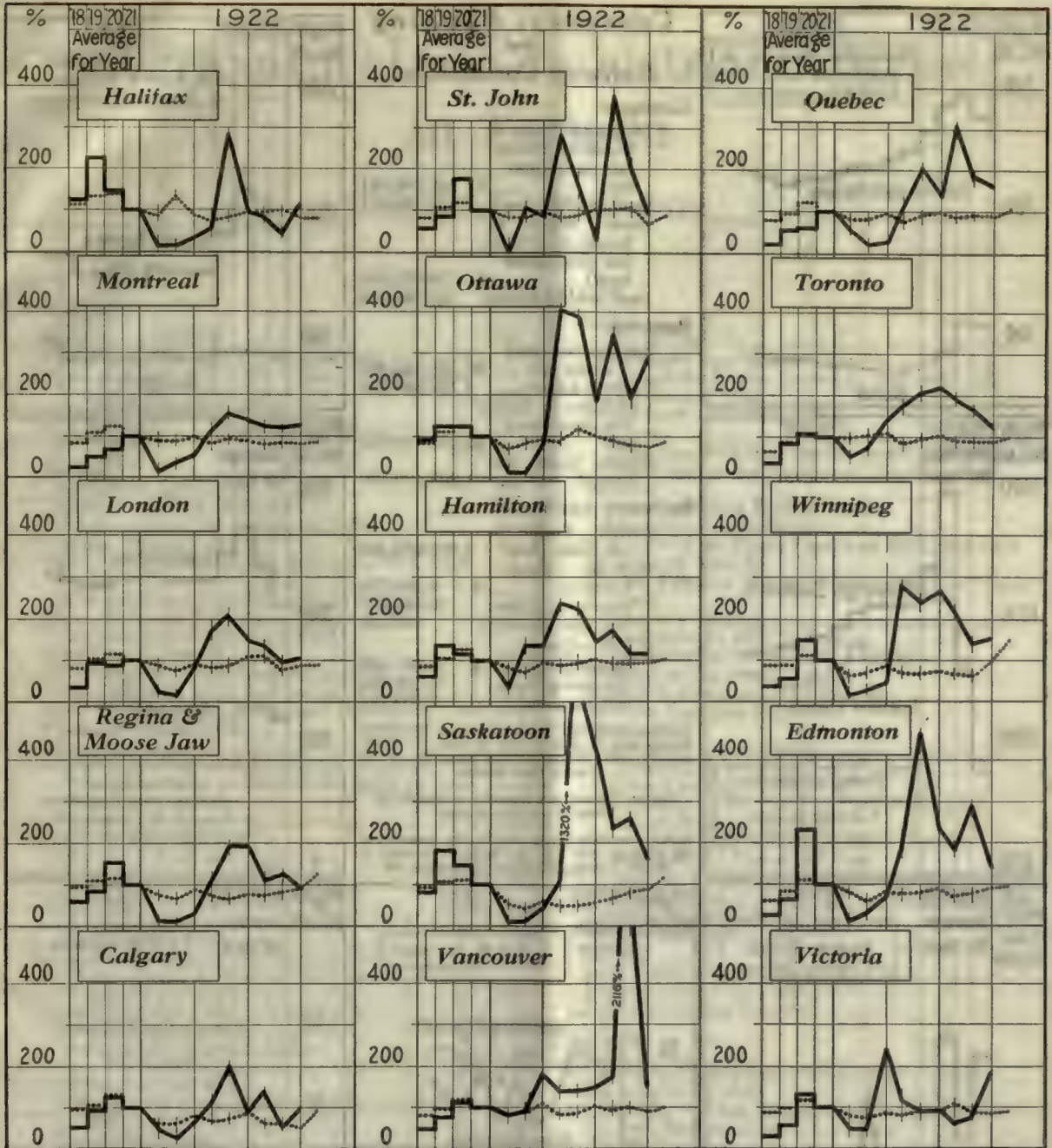
Bank Clearings\$ 521,224,600
Building Const. 12,383,700
Com. Failures 1,019,300

Western Provinces:

Bank Clearings\$ 497,623,300
Building Const. 6,240,200
Com. Failures 629,600

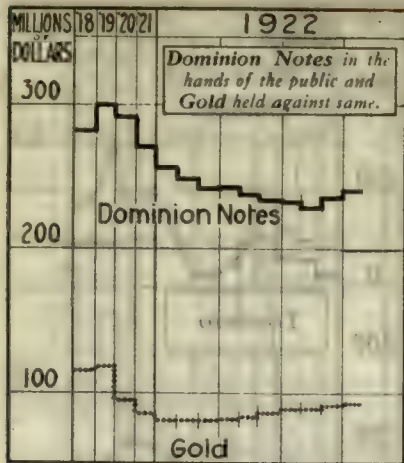
In the above charts and those opposite the average monthly figure for the last completed year (1921) has in each case been taken as 100; the monthly averages for previous years and the actual monthly figures for the current year are expressed as percentages below or above.





Comparative Conditions in Principal Cities (October)
Bank Clearings (dotted lines) and Building Construction (black lines)

Halifax:		Toronto:		Saskatoon:	
Bank Clearings.. ..	\$12,424,400	Bank Clearings.. ..	\$421,223,700	Bank Clearings.. ..	\$9,659,800
Building Construction..	223,340	Building Construction..	2,464,220	Building Construction..	101,650
St. John:		London:		Edmonton:	
Bank Clearings.. ..	\$11,134,400	Bank Clearings.. ..	\$11,673,700	Bank Clearings.. ..	\$20,705,800
Building Construction..	45,000	Building Construction..	215,500	Building Construction..	162,510
Quebec:		Hamilton:		Calgary:	
Bank Clearings.. ..	\$26,083,000	Bank Clearings.. ..	\$25,262,200	Bank Clearings.. ..	\$25,983,700
Building Construction..	491,800	Building Construction..	349,660	Building Construction..	183,400
Montreal:		Winnipeg:		Vancouver:	
Bank Clearings.. ..	\$419,599,300	Bank Clearings.. ..	\$331,145,800	Bank Clearings.. ..	\$58,799,300
Building Construction..	2,213,170	Building Construction..	713,450	Building Construction..	370,060
Ottawa:		Regina & Moose Jaw:		Victoria:	
Bank Clearings.. ..	\$28,802,000	Bank Clearings.. ..	\$23,647,500	Bank Clearings.. ..	\$9,079,200
Building Construction..	654,760	Building Construction..	201,920	Building Construction..	144,230



Currency, Banking and Railway Conditions

Currency:

Dominion Notes in hands of Public (see chart upper left) \$ 240,270,041
Gold against same 93,438,021
Bank Notes in hands of Public (see chart upper right) \$ 178,623,690
Gold held by Banks 102,307,038

Banking:

Savings (see chart centre left) \$1,156,442,453
Current Loans 1,122,840,459
Liabilities to Public (see chart centre left) \$2,405,010,937
Assets, Quick and Liquid 1,203,489,430

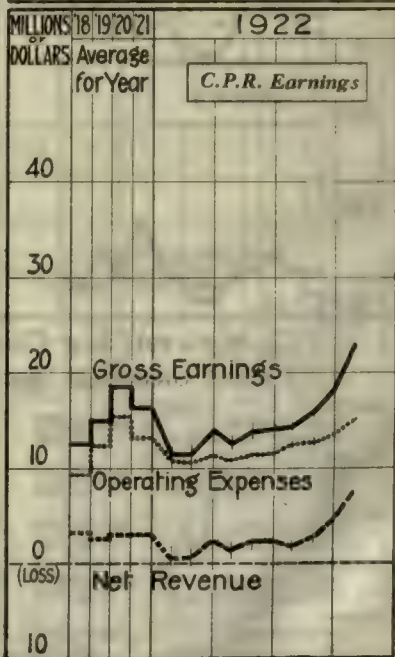
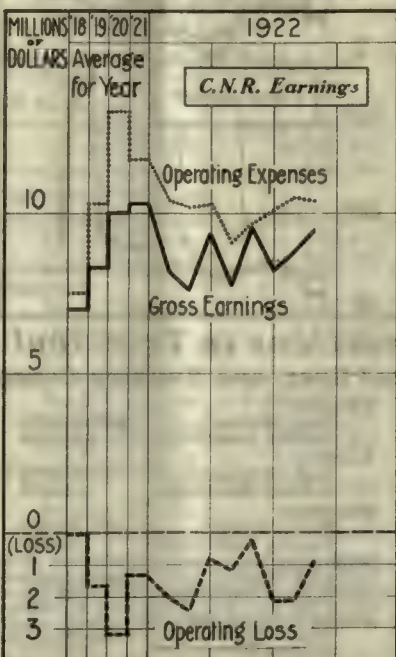
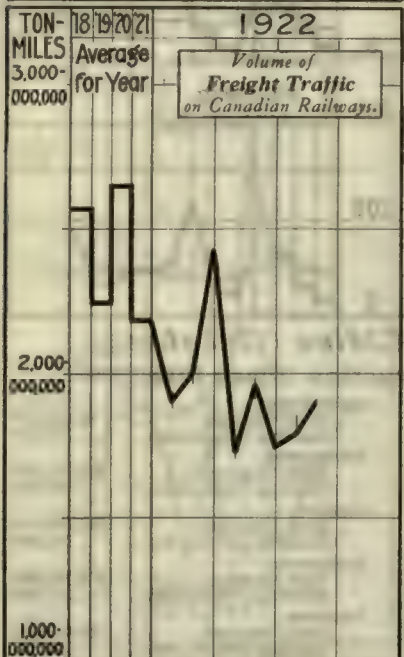
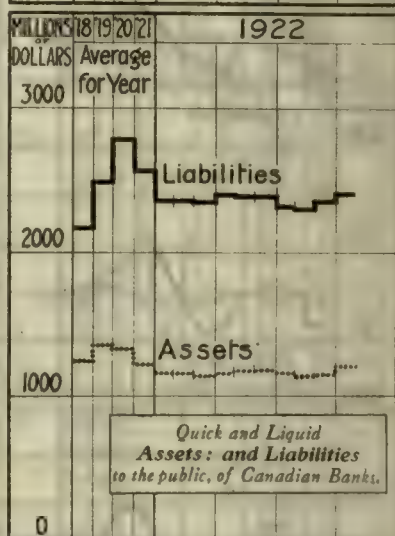
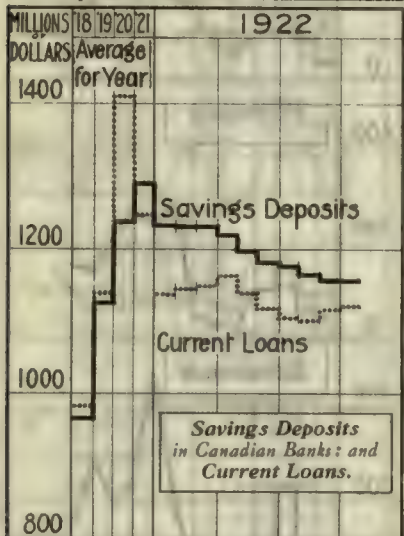
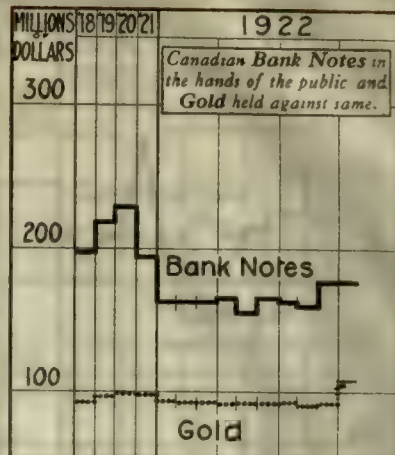
Railways: (chart below)

Freight Traffic in ton miles. (Aug) 1,902,073,254
C. N. R. — Gross Earnings \$ 9,569,780
Operating Exps. 10,399,627
Net Rev. (Deficit) 829,847
C.P.R. — Gross Earnings (Oct.) \$ 23,061,547
Operating Exps. 15,258,803
Net Revenue 7,802,744

Gold against Bank Notes is made up of two items: Specie held by Banks; and the Gold, as distinguished from Dominion Notes deposited in the Central Gold Reserve.

Savings Deposits are Deposits repayment of which is subject to Notice.

C.P.R. earnings refers only to the earnings of the railway and does not include earnings of Hotels, Telegraphs, Ocean Steamships, etc.



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